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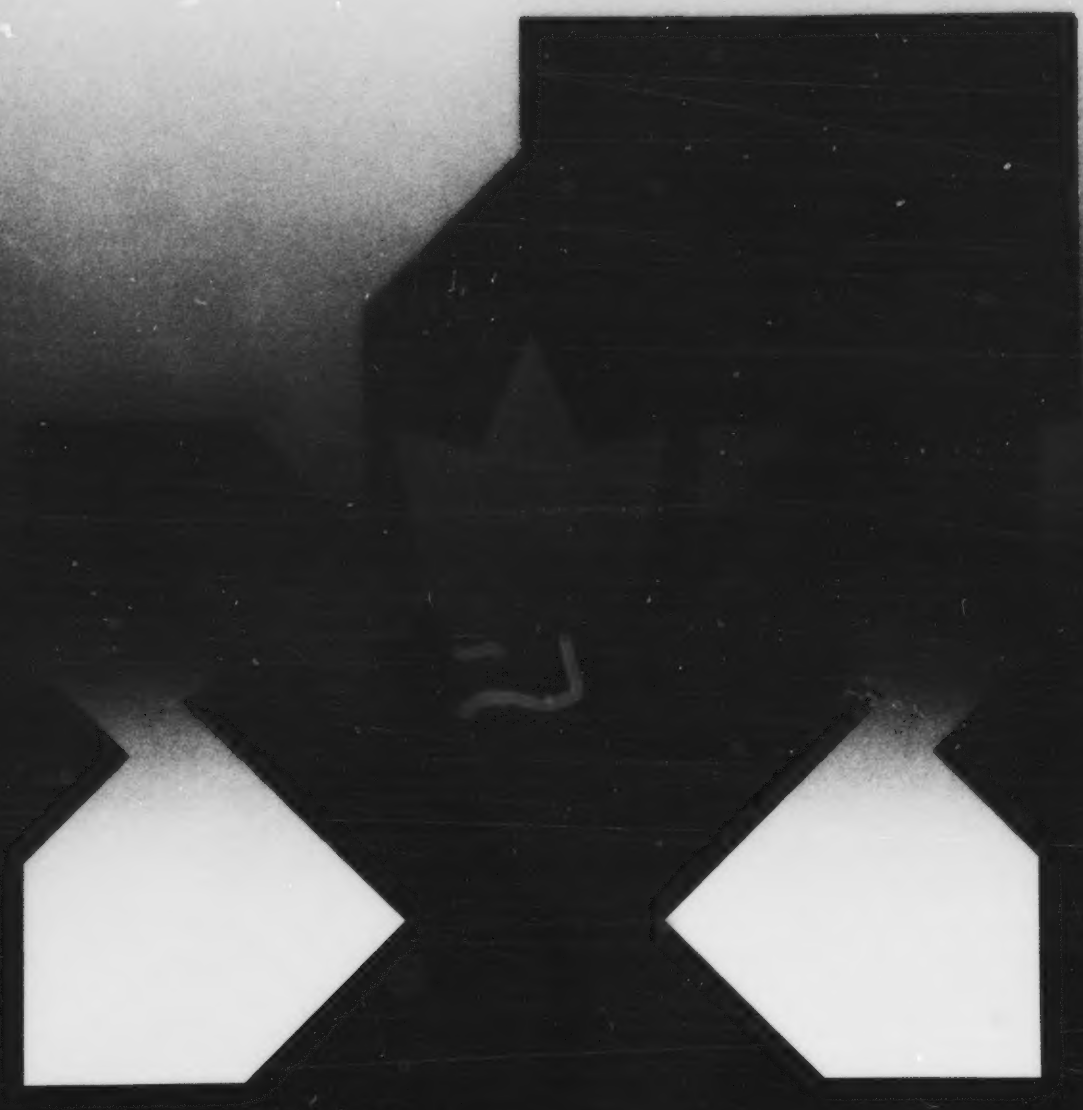

Canada

SURVEY INSTRUMENT DEVELOPMENT FOR A NATIONAL SURVEY OF HOUSING CONDITIONS

FINAL REPORT

Survey Instrument Development for a National Survey of Housing Conditions

Final Report

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SUMMARY

DEVELOPMENT OF INSTRUMENTS FOR A NATIONAL SURVEY ON HOUSING CONDITIONS

The purpose of this research is to develop instruments for a national survey on housing conditions to describe the quality of the Canadian housing stock and its adequacy.

The consultations with potential users of the survey results (i.e. federal departments, provincial governments and industry associations) revealed that the research priorities are building characteristics, physical condition, dwelling suitability and, maintenance and repairs. Secondary research issues include the physical condition of the site, the interior environment (air, noise, sunlight...) health and safety aspects, and the surrounding environment.

The instruments developed include a physical inspection instrument and three questionnaires to homeowners, renters and landlords. The instruments use four approaches to measuring physical condition: ratings by technical inspectors, descriptive characteristics, occupant ratings of building performance and occupant ratings of adequacy.

The report recommends some further development for instruments design on common areas of multi-unit buildings, high-rise buildings, neighbourhood data and environmental hazards. To implement a national survey, Ekos Research recommends a pre-test or a pilot study to test the survey instruments and different survey administration methods.

SOMMAIRE

MISE AU POINT D'INSTRUMENTS EN VUE D'UNE ENQUÊTE NATIONALE SUR L'ÉTAT DES LOGEMENTS

La présente recherche vise à mettre au point des instruments destinés à décrire la qualité du stock de logements canadiens dans le cadre d'une enquête nationale sur l'état des logements.

D'après les consultations avec les utilisateurs éventuels des résultats de l'enquête (c.-à-d. les ministères fédéraux, les gouvernements provinciaux et les associations d'industries), les priorités de recherche sont les caractéristiques de la construction, l'état, la grandeur des logements, ainsi que l'entretien et les réparations. L'état de l'emplacement, le milieu intérieur (l'air, le bruit, le soleil...), les aspects de la santé et de la sécurité ainsi que le milieu environnant sont des points de recherche d'intérêt secondaire.

Les instruments mis au point comprennent un instrument d'inspection et trois questionnaires destinés aux propriétaires-occupants, aux locataires et aux propriétaires-bailleurs. Les instruments utilisent quatre approches méthodologiques pour évaluer l'état des logements : l'évaluation donnée par les inspecteurs des services techniques, la description des caractéristiques, et les évaluations données par les occupants, d'une part sur le fonctionnement technique et d'autre part sur la qualité des logements.

Le rapport recommande d'autres recherches pour élaborer des instruments conçus pour évaluer les surfaces communes des immeubles collectifs, les tours d'habitation, le quartier et les dangers environnementaux. Avant de commencer l'étude nationale, Ekos Research recommande de réaliser un test préliminaire ou une étude pilote afin de mettre à l'essai les instruments et les différentes méthodes d'administrer l'enquête.

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1.0 INTRODUCTION

Sound and practical measurement of housing conditions is a precondition for the design and delivery of effective and equitable housing programs. Empirical knowledge about housing conditions also supports important private sector needs (e.g., market forecasting). In order to support the broad range of different applications and users, numerous methodological approaches to providing such data have been developed in the past. The resulting data, which have had varying levels of success in meeting the range of needs of different users, have been used in many very important applications. Whereas it is highly improbable that any simple survey methodology can concomitantly satisfy the needs of all the major "clients" of such surveys, it is clear that it is now possible to define the next practical state-of-the-art in measuring physical house condition.

The objective of this study is to provide the first step in preparing for a national housing condition survey. Unlike some earlier efforts, this survey is intended to be *replicated on a regular basis* to provide ongoing monitoring and evaluation of the quality and adequacy of the stock. This goal of achieving a regular empirical profile of the national (and provincial) housing stock which permits analysis of evolutionary changes in the stock, leads away from large one-shot approaches to ongoing, longitudinal designs. The promise of such an approach is enormous and there have been several major initiatives designed to meet this need: e.g., the 1978 Survey of Housing Conditions (SHU); the U.S.-Canada 1980-81 Study of Physical House Condition; the Statistics Canada Census (i.e., the 2B or long form administered to every fifth household) and the Household Facilities and Equipment (HFE) need for repair question(s); and the 1986 CMHC National Housing Survey, to name just a few of the more significant exercises. These projects provide the foundation for realizing the promise of this 12 year research agenda.

The objectives of the present study are deceptively simple:

> *To develop survey instruments for a national housing survey to describe the evolution of the quality and adequacy of the stock.*

The process of developing these instruments included consultations with federal and provincial housing authorities, consultations with non-governmental organizations involved in housing, a detailed review of existing methodologies, and expert review and commentary on initial drafts. This report presents a preliminary set of instruments for the proposed National Survey of Housing Conditions.

In addition to presenting the survey instruments, this report addresses the major issues related to the design and administration of the proposed survey. These include the following:

- a review of the design criteria and research principles used to develop the instruments;
- a review of the existing approaches to the measurement of physical house condition;
- a review of the existing approaches to the measurement of the broader issue of housing quality and adequacy;
- a summary of the approach used in the 1986 CMHC National Housing Survey, the work which comes closest to providing a model for the proposed survey;
- a discussion of the contents of the instruments, including the specific design features and substantive areas covered; and
- a discussion of the advantages and disadvantages for the different survey administration options.

2.0 RESEARCH PRINCIPLES AND INSTRUMENT DESIGN CRITERIA

Following is a brief discussion of some of the major design criteria and research principles that have been applied to the development of instruments for the survey. The guiding principles of this discussion are based on years of research and an extensive review of previous housing research and literature. Some of the most pertinent articles are briefly summarized in Appendix A.

The Need for Sound Knowledge

The first requirement is for valid and reliable measures of housing condition. Reliability (i.e., the intersubjective repeatability of results) is particularly important given the emphasis on this approach as a *regular* survey. Validity (i.e., true measurement) is equally important. Existing single indicator measures drawn from the Census and HFE surveys have been shown to be problematic in this area.

The Need for an Evolutionary, Comparable Approach

The project is intended to fit into a national, ongoing monitoring and evaluation approach. By this we mean that the survey would be reproduced on a regular basis (e.g., every three or five years). The survey results must be comparable, in a semantically consistent fashion, both through time and across regions. In other words, it must be possible to support clear inferences regarding changes in the condition of the stock over time (e.g., the percentage of the stock which is overall substandard, the percentage and number of dwellings which are substandard with respect to more specific problems such as climate control, radon emissions, etc.). It must also be possible to make clear inferences about differences in levels of housing conditions from province to province.

These objectives are best achieved by constructing the new approach on the foundation of existing methodology. CMHC, several of the provinces, certain municipalities, several other federal players (e.g., Indian and Northern Affairs

Canada, Department of National Defense) and others have been involved in developing and refining a basic housing condition survey methodology over the past decade. The initial prototype of the methodology was developed and tested in the context of the 1980-81 U.S.-Canada Study on Measuring Physical House Condition, Rehabilitation Need, Rehabilitation Cost and Rehabilitation Potential. These methods have been iteratively refined in dozens of successful applications[1] and tens of thousands of dwellings have been successfully measured using this approach. It provides a proven, world-class methodological foundation to build upon. By anchoring the new methods in this tradition, we will ensure back-wise consistency and comparability. This will ensure at least a decade head-start over the alternative of developing and testing a new methodology *ex nihilo.*

The Need for a Critical Refinement to Correct Known Weaknesses and to Meet New Requirements

The argument for building upon and linking to past methods does not imply a simple reproduction of the *status quo.* Anchoring part of the methodology in past methods should enhance back-wise comparability and access to earlier national and provincial data sets, and assure the feasibility and credibility of the methodology. On the other hand, there are numerous correctable deficiencies in the existing methods as well as a series of new challenges which are not addressed by the past methods.[2]

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[1] The 1986 Residential Rehabilitation Assistance Program (RRAP) Evaluation, the 1986 CMHC National Housing Survey, the 1987 Newfoundland and Labrador Housing Needs Assessment, the 1986 Ontario Study of Low-Rise Apartments, the 1987 Thom Commission Study of Landlords and the Low-Rise Rental Stock, and the 1985 Evaluation of the On-Reserve Housing Program, to name a few of the more successful applications.

[2] A recent report on this subject by the Société d'habitation du Québec echoes this view. "The number of items of information required, necessarily involving many new survey questions, means the creation of new instruments (even if they remain connected to existing survey systems)." New Approaches to the Evaluation of Quality of Housing, SHQ, 1989, p. 24-25.

Areas Requiring Further Development

A partial list of some of areas of the existing methods that require further development includes the following:

- common areas of multi-unit buildings;
- extension to the high-rise stock;
- lack of neighbourhood-level data;
- the technical obscurity of the process of calibrating and subsequently correcting occupant-derived condition data based on comparisons with technical inspection data);
- need to deal (at least at a subsample level) with new substantive areas such as ambient noise, environmental hazards (e.g., radon, toxic materials), neighbourhood quality, recreational areas and greenspace; and
- problems of linked response rates (for tenants and landlords).

Scoping the Instruments

The breadth of potential substantive issues has necessitated careful weighing and balancing of different topic areas in order to ensure that the instruments represent the highest practical equilibrium of resources, data quality and substantive scope. The potential range is from a simple single indicator approach (e.g., the Census or HFE need for repair question) to methodologies involving multiple sources of information and several hundred variables. It is not possible to capture all potential issues in a single set of household, landlord and inspection instruments. Careful consultations with CMHC and interested parties from across the country (discussed later in this report) were essential to identify the proper balance among the range of options.

Conceptualization — The House as Part of a Broader Shelter System

The survey must clearly explicate the key concepts germane to survey instrument design. Even such elementary concepts as the house are potentially confusing when considering variations such as the building (physical structure), the property (the legal unit) and the household (the occupant).

A sound approach must first consider the problem of physical conditions and then consider problems such as suitability and affordability which entail the dynamic interaction of the physical structure and the occupants. These must be considered in both "objective" and "perceptual" terms. Additional layers of complexity are added when adjacent lots and land use, the local neighbourhood and the non-resident owner are considered.

The Broader Survey Design Problem: Links to Survey Methods, Sampling and Training

Instrument design should not be divorced from considerations about the broader survey methodology. For example, in order to avoid the need for photographic prompts or explanations of interviewer rating schemes, training systems are crucial. Similarly, the final configuration of survey methods, sampling strategies and modular instruments is an interdependent puzzle. Each consideration affects the other in a complex chain and it is imprudent to consider any in isolation. As we discuss later in this report, the instruments developed for this study will need further review and revisions based on the results of a more complete research design and methodology design phase.

3.0 A REVIEW OF EXISTING APPROACHES TO THE MEASUREMENT OF HOUSING QUALITY AND ADEQUACY

3.1 Approaches to the Measurement of Physical House Condition

Generally speaking, there have been four approaches used over the last 10 years to measure physical house condition. In many respects these approaches are complementary, each providing information from a different perspective. Although a number of the more important studies have used two or more of the different measurement approaches, most emphasize one approach more than the others.

1/ Ratings of Physical House Condition: these ratings (e.g., seven point scales, three category need for repair questions) provide a judgement about the condition of the dwelling made on the basis of the expertise (in the case of technical inspectors) or the experience (in the case of occupants) of the respondent.

2/ Objective Characteristics of the Dwelling: with this approach physical condition assessments are made on the basis of specific characteristics or problems (e.g., a hole in the wall of a certain size, the presence or absence of moisture penetration);

3/ Performance of Building Components and Systems: this approach is based on information provided by occupants about breakdowns of dwelling components, especially mechanical system breakdowns; and

4/ Perceived Physical Adequacy of the Dwelling: this approach uses occupant perceptions to evaluate the physical adequacy of a dwelling (e.g., satisfaction with the heating system or the state of repair); perceptions and satisfaction ratings are also used to evaluate other aspects of physical adequacy such as the building design (e.g., the size and layout of rooms) and air and water quality.

3.1.1 Ratings of Physical House Condition

Physical condition ratings are used to provide an assessment of the state of repair of a particular building or building component. These ratings are judgements by the rater made on the basis of their overall evaluation of the item under consideration. The emphasis is placed upon the state of repair of the component or system; typically the causes of decay or the specific actions required to repair an item are considered. Physical condition ratings can be made by building inspectors, interviewers/enumerators or occupants. When made by qualified building inspectors the ratings are usually associated with an estimate of the repair costs to restore the item to an acceptable standard.

The simplest best known forms of such a rating are the three category need for repair questions used in the 1981 Census and Statistics Canada HFE surveys conducted throughout the 1980's. This question is about the overall need for repair rating for the entire dwelling. Analyses of Census and HFE data have shown that the occupant ratings of need for repair using this highly general measure are known to yield only weak validity at the household level. At higher levels of aggregation such as the provincial level the results are more satisfactory. However, recent research has shown that the results exhibit systematic errors[1] that could be significantly reduced through more rigorous methods of measurement.

A more sophisticated seven point scale version of a physical condition rating has been used in many surveys and evaluations conducted by CMHC in the 1980's, as well as in several studies conducted by other federal and provincial housing agencies. Such ratings can be made on either very general items (e.g., the entire dwelling) or on very specific building components. Typically the types of items rated are divided into broad categories: e.g., surfaces and structures, interior and exterior, dwelling and property, and mechanical systems. An example of the type of scale used is as follows:

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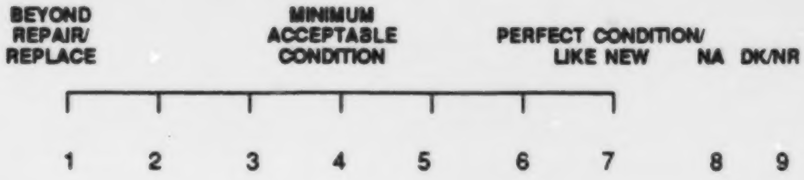
[1] The degree and type of error with the data resulting from these questions is discussed in "An Examination of the Census and HFE Need for Repair Questions for the 1991 Census", Ekos Research Associates, for CMHC, 1988

Provide an overall rating of the bathroom equipment (e.g., toilet, sink, shower/bath) on the basis of its condition.



The seven point scale is anchored with two extremes — the poles of perfect condition/like new and beyond repair/replace — and a midpoint. The midpoint for this type of scale, or any other scale incorporating a pass or fail criterion, must be based on a commonly accepted standard for the item being assessed. In all of the versions of this type of scale used by CMHC, the midpoint of the scale has denoted a "minimum acceptable condition": i.e., the point just above the failure point on minimum standards for existing residential dwellings. Inspectors have generally equated this with the standards used in assessing dwellings for RRAP.

The seven point rating scales have been used by qualified building inspectors, trained interviewers and dwelling occupants. Technical inspectors require a standardized training session to ensure that the scales are used in a consistent manner. Because of their technical expertise, inspectors provide accurate (i.e., valid) data about physical condition and repair need; the training sessions ensure that the data are also consistent (i.e., reliable) for different inspectors. Trained interviewers can provide reasonably good data about physical condition at a much lower cost than qualified technical inspectors. However, they cannot provide valid data about mechanical systems or repair costs of items that fall below an acceptable standard. While occupants can provide some useful information about physical condition, they tend to underestimate the need for serious repairs. Controlled comparisons between occupant and inspector ratings of the same dwellings have shown that the degree of correspondence between the two are generally quite modest.[1] However, occupant ratings have been shown to provide data that can be very useful in the estimation of actual physical condition if analyzed in conjunction with other key occupant and dwelling characteristics such as dwelling age and household income.[2] In general, homeowners have been shown to provide better ratings of dwelling condition than renters.

Overall evaluations of the condition of a dwelling (i.e., is the dwelling substandard or not?) can be made in one of two ways from the scaled physical condition ratings. First, an overall score can be calculated from all of the individual condition ratings made by inspectors (or interviewers or occupants). This "summary" score incorporates the various judgements made by the rater about the different components and systems of the dwelling. Secondly, overall or "global" ratings are made by the respondent; these are single ratings which take into account all of the aspects of the dwelling (e.g., How would you rate the overall condition of this dwelling ...?). Empirically the results produced by these two approaches are very similar: for inspectors, the Pearson correlation coefficient between the global and summary ratings typically ranges from +.8 to +.9 (this coefficient can vary from -1.0 to +1.0). These results beg the question: why not save the inspector's time and just rate the overall condition, skipping all of the detailed items? In fact, the process of considering all of the components and systems of a dwelling before making an overall assessment is crucial. The inspector must review the entire dwelling before an informed and credible overall judgement is possible.

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[1] The degree of error is greatest at the unit level and usually decreases at higher levels of aggregation. This is because some of the errors made by occupants cancel each other out: for example, some occupants will rate an item in good condition as substandard while others will rate an item in poor condition as meeting an acceptable standard. The net effect is to reduce the overall error when a larger number of cases are considered.

[2] The reduction of error in estimates of physical house condition that can be made by first comparing occupant and inspector ratings and by subsequently correcting occupant scores with data on variables such as dwelling age, household income and dwelling location (using multivariate statistical models) has been discussed in a report entitled "Improving upon Measures of Physical House Condition" prepared for CMHC in 1987 by Ekos Research.

To summarize, scaled ratings of physical condition have been used in numerous successful applications in the 1980's: for CMHC these include the 1980 Ottawa Pilot Study of Physical House Condition and Rehabilitation Need, the 1983-84 Evaluation of RRAP, and the 1986 National Housing Survey; major provincial studies using this approach have also been conducted in Ontario (The Coming Crisis: Low Rise Rental Housing in Metropolitan Ontario, 1985) and Newfoundland (The 1987 Newfoundland and Labrador Housing Needs Assessment). The strongest survey designs using this approach have used qualified inspectors for a subsample of dwellings. Two important studies have also used trained interviewers to collect physical condition data for all dwellings in the sample: one was a test of a new methodology (i.e., the 1980 CMHC Ottawa Pilot); the other was an evaluation of a major federal housing program (i.e., the 1985 joint DIAND/CMHC On-Reserve Housing Program Evaluation).

3.1.2 Descriptive and Objective Dwelling Characteristics

Information about the descriptive characteristics of the dwelling and objective data about problems and deficiencies with dwelling components and systems are used to prepare a factual profile of the physical condition of the dwelling. Descriptive characteristics include such things as the building structure type, the number of complete bathrooms, the number of entrances and exits, the type of heating system, etc.. The objective measures are based on comparing the condition of a particular item against a defined standard. The goal of this measurement approach is to avoid any inconsistencies that may result from the use of "subjective" measures: specifically those based on occupant perceptions about specific problems or deficiencies.

The prototype for this type of survey methodology was developed by the American Public Health Association (APHA); their objective was "to eliminate or minimize individual opinion so as to arrive at a numerical value of the quality of housing that may be compared with results in other cities and may be reproduced in the same city by different evaluators using the same system."[1] It is based on a system of weighted indicators[2] (e.g., pass/fail on specific items) designed to show the degree to which a dwelling deviated from a given standard. Since 1973 this approach has been incorporated into the national Annual Housing Survey (AHS) conducted by the U.S. Census Bureau for the Department of Housing and Urban Development.

With this measurement approach, the data about problems and deficiencies are considered objective in the sense that they are based on accepted, well-defined standards: for example, a passing or failing rating may be given based on the size of crack in a wall, the presence or absence or an appropriate number of windows, or the presence or absence of moisture leaks or cold air drafts. Frequently, the types of measures used are dichotomous ratings (i.e., yes/no) about the presence or absence of a specific condition or problem: for example, dampness or flooding in the basement, presence of an electrical outlet in every room, plumbing facilities in working order. For many of these types of items it is relatively easy for the respondent to identify the objective problem or deficiency: the problem either exists or it does not.

However, for many types of building components and systems, there is a great deal of variability in what can be considered as a passing or failing standard. For example, should the crack in the wall be one millimetre or one centimetre for the wall to be substandard (e.g., or in need of major or minor repair)? — or how many missing or loose steps must there be for the problem to be considered severe versus moderate? Ensuring that the responses to these types of questions are objective (i.e., that respondents can provide factual information about the problems) imposes a requirement for precise definitions of the item and well-defined criteria about what is substandard. To assess the overall repair need of the dwelling, criteria must be established about the severity of a problem and its relative contribution to the rating of the overall physical condition of the dwelling.

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[1] Abt Associate Inc., Codebook for the Annual Housing Survey Data Base, prepared for the U.S. Department of Housing and Urban Development, Cambridge, Mass., 1988, Section 6-43.

[2] With this system the weights are assigned deductively, rather than on the basis of empirical relationships among the different indicators. For example, the relative weights (scored as penalty points) for structural problems and bathroom facilities are based on the judgements of experts rather than on empirical relationships such as the relative contribution to the overall repair cost of the dwelling.

Most of the information about basic dwelling characteristics can be collected from inspectors, interviewers/enumerators or occupants. Similarly, objective measures of physical condition are usually designed so that the data can be collected by people with relatively little experience or training (e.g., interviewers). The key to successful measurement is in defining the criteria in a clear and unambiguous manner.

The U.S. component of the joint 1980 Canada-U.S. Pilot Study of Physical House Condition and Rehabilitation Need provided a major test of the validity of data collected using these type of objective measures of physical condition. While the instruments were quite sophisticated and included a variety of types of measures, the emphasis in the technical component was on identifying the presence or absence of specific problems and on rating whether building components passed or failed according to predetermined criteria. Occupants provided information about the performance of many of the same dwelling components and systems as were considered by the technical inspectors. In general, the degree of correspondence between the inspector and occupant assessments of problems was similar to the degree of correspondence of the Canadian version of the pilot: the proportion of similar responses varied between 60 per cent and 80 per cent.

One of the major difficulties with the approach which uses "objective" measures of physical house condition, as typified by the American Housing Survey, is that it is very difficult to produce a summary profile of the overall house condition from the individual items. In the detailed tests conducted during the U.S.-Canada Pilot Study, there were few correlations between any of the items. For example, there was no correlation between the measures of exterior and interior condition in the U.S. data; this correlation was very strong in the Canadian data. To determine whether the house as a whole is substandard, the findings for key individual items are compared to predetermined standards (e.g., Section 8 — a RRAP-like standard). However, the data from the factual assessments about specific problems do not readily enable the analyst to calculate a summary measure of overall house condition. This can create problems in program or policy applications where an overall measure of physical condition (e.g., pass/fail) or repair need (e.g., major/minor/none) is required: for example, for the calculation of CMHC's core need housing model (discussed in the next section).

3.1.3 Performance of Building Components and Systems

Assessments of the performance of building components and mechanical systems generally are based on occupant reports of breakdowns or deficiencies. In previous major surveys conducted in Canada, physical inspections typically have been limited to visual ratings of the building, whether these ratings are made by inspectors or trained interviewers. This approach may lead to flawed assessments if a structurally sound item does not actually work. Without sophisticated and potentially expensive testing procedures, the best alternative for determining how well the various building systems work is to ask the occupants.

Questions about mechanical system performance usually are divided into two parts: the first part determines if there have been any breakdowns; the second part determines the frequency of the problem. These questions can also deal with the performance of building components which have an obvious impact when they are deficient: for example, cold air drafts from poorly fitting windows or doors, or moisture penetration from a leaking roof, walls or windows.

One of the difficulties with the data derived from such questions is that they may not provide an accurate picture of the extent of a particular problem. For example, a serious and frequent leak may be the result of a relatively minor problem. To determine the physical condition and repair need of a particular system or component, the performance data need to be supplemented with other information about the state of repair of the item in question.

3.1.4 Perceived Adequacy of the Dwelling

Questions dealing with perceptions of the adequacy of housing deal with the extent to which the dwelling satisfies the specific needs and preferences of the occupant. They address the issues of housing quality and adequacy from the user's point of view. This approach is based on the assumption that the perspective of the occupant, like comparisons of objective dwelling conditions with external criteria, is a valid one. As has been noted by Mr. Jacques Trudel[1], the choice between "objective" and "subjective" measurement approaches depends upon the housing survey objectives and policy concerns. He compares the American approach, which emphasizes measurement of objective housing conditions in order to eliminate substandard housing, with the French approach, which places a greater emphasis on the satisfaction of the occupant in order to address broader policy objectives.

Occupant perceptions of the adequacy of the dwelling are important for dealing with issues that cannot be addressed by a third party review of the dwelling. For example, the suitability of the space (design and layout of rooms), the supply of hot water to meet household needs, the degree of comfort, the quality of air and water, and problems with noise are issues for which individual and household differences will have an impact on the responses to survey questions.

Survey questions about occupant perceptions of housing quality are often presented in the form of attitudinal scales measuring occupant satisfaction (e.g., the General Household Survey in Great Britain as well as a number of the major Canadian surveys conducted by CMHC and others). They are rarely, if ever, used as the sole source of data about housing adequacy. Occupant perceptions are almost always linked with other types of measures such as physical condition assessments or reports about breakdowns of building components and systems.

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[1] New Approaches to the Evaluation of Quality of Housing: Study Report and Discussion Paper, Jacques Trudel, Société d'habitation du Québec, November, 1989. pp. 11-12.

3.2 Approaches to the Measurement of Affordability, Suitability and the Broader Housing Environment

While the primary focus of this report is physical house condition and physical adequacy, this represents just one aspect — although a very important aspect — of the broader issue of overall housing quality and dwelling adequacy. The other major components of housing quality which are briefly discussed in this report are affordability, suitability (in particular crowding) and the broader housing environment, which includes a great many factors such as the services and infrastructure of a community, the characteristics of the neighbourhood and wider community, and environmental quality and pollution.

In Canada the best known and most widely used system for assessing the overall adequacy of a dwelling is CMHC's "core housing need model".[1] This model considers three aspects of housing need: 1/ physical adequacy (structural requirements); 2/ space requirements (suitability or crowding); and 3/ affordability. With the core need model, dwellings are evaluated on the basis of "norm housing standards" for each of the three aspects of housing need. The three aspects of housing need are incorporated into a single comprehensive measure of housing need to determine if a household falls above or below the core need threshold. There are two steps in this process: first, the dwelling and household are evaluated against the "norm housing standards of the day" for suitability, physical adequacy and affordability; second, the incomes of those households falling below the norm for one or more of the three standards "are compared to the incomes that these households would require to afford suitable, adequate rental accommodation". Those households which both fail one of the physical adequacy, suitability and affordability standards and which fall below the required income threshold (termed the norm rent income) are considered by CMHC to be in core housing need.

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[1] The most up-to-date definitions and explanations of core housing need are explained in a recent CMHC publication entitled "The Core Housing Need Model — A Reference Note", CMHC Research Division, September, 1990.

Canadian estimates of the number and proportion of dwellings which fail the physical adequacy dimension are generally based on estimates of "major repair" need calculated from the Statistics Canada HFE Surveys. As indicated earlier in this report there are some flaws in this approach which could be addressed through a more rigorous measurement procedure. Some alternatives for evaluating physical adequacy based on the data that could be collected with the instruments presented in this report are discussed later in Section 6.

The issues of suitability, affordability and the broader housing environment are briefly discussed in this section to help situate the physical adequacy issue within the wider context of overall housing adequacy or quality. Because of the importance of linking data for these various issues at the household/dwelling level, the instruments presented with this report include questions dealing with all of the issues. In the event that any future physical condition survey were linked (at the household/dwelling level) to other data collection efforts that already addressed these other issues, then some of the questions included in these instruments would not be required.

3.2.1 Affordability

Housing affordability is a fundamental component of the total picture of housing quality. Interest in this issue and the attention that it is receiving from various levels of government and the public at large have probably never been higher. However, from a measurement perspective the issue of affordability is not as difficult as the physical adequacy issue and it is not addressed in any length in this report. The key ingredients for calculating most ratios of affordability are household income and total shelter costs (the CMHC core housing need model also requires data for rent costs for adequate shelter in different markets). The household income and total shelter cost variables have been successfully measured for many years in various surveys and evaluations by Statistics Canada, CMHC, etc.. While the definitions of affordability may change through time, the important consideration for the proposed national housing survey is to incorporate survey items which collect the pertinent data for computing the necessary ratios.

Some other issues related to affordability that should be considered in the design of a national housing survey are as follows:

- the affordability of modifications and renovations for households with special needs (e.g., meeting the needs of a disabled person);
- the costs of home repairs for households which do not fall below the core need affordability threshold, but which cannot afford needed repairs: for example, elderly homeowners with no mortgage (i.e., low shelter costs) but with a low income and little cash to pay for repairs; this issue does not effect the CMHC core housing need model calculations but it is a concern expressed by some provincial representatives; and
- establishing reasonable and fair thresholds of costs for affordable housing (e.g., the norm rent income) given economic factors such as the costs of shelter in different housing markets and variable interest rates, and the availability of alternative housing in different markets.

3.2.2 Suitability

As an element of overall dwelling adequacy, the issue of suitability is usually conceived of in terms of the adequacy of the spatial component of the dwelling. This includes the amount of space in relation to the number of people — crowding, which is generally the most urgent concern. It also includes the arrangement of the space: for example, the use of interior space, the number of and layout of rooms, and the availability of specialized areas such as storage rooms, closets, play areas, etc... Other issues related to dwelling suitability include the special needs of occupants such as disabled persons, children, and older residents.

Like measurement of housing affordability, the key ingredients required to calculate crowding have been well established and measurement procedures have been significantly improved in recent years. Data concerning the composition of the household and the characteristics of the dwelling have been collected on a great many surveys and standardized questions that produce valid and reliable data already exist. Again, the major issue is the standard used to calculate crowding; these can vary from simple standards such as one person per room to more sophisticated measures like CMHC's National Occupancy Standard which takes into account the age and gender of children and the relationships among household members.

3.2.3 The Broader Housing Environment

The relationship between the quality of the environment and the quality of housing is becoming a more important concern for Canadians. The quality of the services and infrastructure of a community, air, water and noise pollution, urban problems and the quality of life in local neighbourhoods, are all factors which have an impact on occupant satisfaction with housing. In general, these issues relating to the interaction between housing and the broader environment have not been adequately dealt with in major Canadian housing surveys. The emphasis has mainly been on those aspects of housing quality that constitute the core housing need model: physical adequacy, suitability and affordability. However, from conducting the consultations with provincial housing authorities and others agencies during this project, we know that the environmental and community factors related to housing quality are now given a high priority for any future national housing survey.

The lack of environmental data to support inferences about housing quality based on surveys of physical house condition has been a concern in the U.S. for over 20 years, primarily because of the problems related to urban decay. Commenting on the housing condition data from the 1960 census (based on a three category need for repair question), the housing chief of the U.S. Census Bureau made the following statement: "It is an oversimplified view to look at housing only in terms of structural condition. There is nothing in the census data that really measures the deterioration of our cities."[1] This deficiency was one of the main reasons prompting the Census Bureau to drop the need for repair question from the 1970 census.

Because environmental issues have not been dealt with adequately in previous research, there is a much smaller body of work from which to draw in developing questions and survey instruments addressing these issues. It is our opinion that the survey objectives concerning environmental issues will need to be more clearly defined and that new survey questions which are developed will require closer scrutiny (e.g., pretesting) than those dealing with the dwelling.

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[1] as reported in Housing Crisis U.S.A., by Joseph P. Fried, Praeger, New York, 1971, p. 190.

4.0 SUMMARY OF THE METHODOLOGY USED IN THE 1986 NATIONAL HOUSING SURVEY

Of all of the previous housing surveys conducted in Canada, the 1986 CMHC National Housing Survey (NHS) comes the closest to providing a model for the proposed National Survey of Housing Conditions (NSHC). The approach upon which the 1986 NHS was based was the culmination of several years of housing research including studies such as the joint 1980 U.S.-Canada Pilot Study of Physical House Condition, the 1983-84 RRAP Evaluation, the 1985 DIAND/CMHC On-Reserve Housing Program Evaluation, and a major pilot study for the NHS conducted in 1985. While the proposed NSHC will represent a significant advance over previous methodologies in the evolution of Canadian housing research, there are a number of features of the 1986 version which merit close examination and emulation. These include the following:

- many of the major objectives and issues of the survey were similar to the objectives and issues (as expressed by CMHC as well as other agencies across the country) of the proposed NSHC;

- the NHS included large, nationally representative samples of homeowners, tenants and landlords (approximately 9,000, 2,600 and 1,000 cases, respectively);

- the survey provided high quality data on overall dwelling adequacy, physical house condition, repair costs, and the nature, extent and costs of low rise residential renovation activity in 1985;

- technical inspections were conducted by CMHC inspectors on a 10 per cent subsample of buildings;

- the methodology used for survey administration, including a randomized telephone survey to generate the sample and a mailout questionnaire (with follow-ups) for the actual survey, was very successful in achieving the survey objectives; it was also cost effective.

Survey Administration[1]

The main features of the methodology can be summarized as follows:

- The study population was defined as all owners, renters and landlords of low-rise dwellings (i.e., four stories or less) in Canada.
- The survey was conducted by mail, with separate questionnaires being sent to homeowners, tenants and landlords for self-completion. Reminders and follow-up questionnaires were also sent at scheduled intervals.
- Homeowner and tenant respondents were first contacted by telephone to solicit agreement to receive a questionnaire.
- The sample of telephone numbers for homeowners and tenants was selected with a computerized random-digit generation procedure. Sample stratification ensured a minimum number of respondents in each province.
- Landlords were identified by tenants. Where necessary, additional mailing information was acquired through both supplementary research and direct contact with landlords. The second landlord questionnaires were delivered by courier.

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[1] This summary of the NHS survey methodology is taken from the executive summary of the Final Report for the 1986 National Housing Study, Ekos Research Associates, 1987, p. ii.

- All mailing list and survey data were computerized. Each case (i.e., potential respondent) was assigned a unique identifier that permitted tracking through the three waves of the survey. common elements of the case identifiers also permitted the linkage of tenants and landlords.

- A brief telephone survey was conducted with a sample of non-respondents to provide data to test for bias in the responding sample.

The response to the survey was very positive. The final response rates to the mail survey were as follows: homeowners (68 per cent); tenants (68 per cent); and landlords (53 per cent).[1]

Although these response rates were very positive, it should be noted that landlords have traditionally been a difficult group to survey. One of the reasons that the response to the landlord component of the 1986 NHS was so high (much higher than in some previous landlord surveys attempted) was because of the special efforts that were made to encourage participation. For example, courier service was used for delivery and pick up of questionnaires. Achieving the 53 per cent landlord response rate required flexibility on the part of the researchers, who were open to the use of multiple methods of administration (telephone, in-person, mail and courier delivery, etc.), depending on the wishes of the landlord.

In any future survey we would expect that landlords would continue to be a difficult and expensive group to survey; this should be considered in preparing a budget plan for the landlord component. Furthermore, while the 1986 NHS and 1984-85 Ontario low-rise studies provide precedents for survey response rates for landlords of low rise apartment buildings, the methodology for landlords of high rise apartment buildings is untested. As yet there is no source of evidence about the expected response rates for owners of this type of building. The landlords will frequently be large corporations or numbered companies; also the types of questions often require completion by different types of respondents for complex buildings (e.g., owners, property managers, site supervisors). While these problems are difficult ones, we believe that they can be addressed through careful administration procedures. However, a successful landlord survey will require much more time and resources (e.g., per case) than the occupant surveys.

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[1] These response rates take into account estimates of the number of ineligible people on the mailing list. These cases were identified during the non-response telephone survey conducted after the mail survey. If the response rate calculations are based on all questionnaires mailed and returned, the response rates are as follows: homeowners (57 per cent); tenants (57 per cent); and landlords (41 per cent).

Data Quality

A detailed analysis of the 1986 CMHC NHS data demonstrated that the approach produced high quality data for most of the survey items. There was one crucial finding of the analysis of occupant ratings of physical condition that is pertinent to any future survey. Used on their own, occupant (or landlord) ratings of physical condition are questionable in terms of reliability and validity; estimates of repair need based on these ratings are systematically biased, usually in the direction of an underestimate of major repair need. The type and direction of error was confirmed through a detailed comparison with the technical inspection data. Because these occupant errors are systematic, varying by characteristics such as household income and dwelling age, the occupant estimates can be significantly improved by developing statistical models that incorporate the occupant ratings and other pertinent household and dwelling characteristics. The result of these comparison and calibration procedures between occupant and inspector data is a procedure (i.e., a statistical model) which will produce reasonable estimates of repair need based on occupant-supplied data.

Technical personnel were generally satisfied that the repair cost estimates provided for the low rise buildings in the NHS sample were both reasonably valid and reliable. It must also be remembered that the objective was to provide repair cost estimates for relatively broad categories such as different types of buildings, building systems and components and buildings grouped within geographic areas. At higher levels of aggregation any errors made in the estimation procedures (e.g., because of limiting probing techniques to non-destructive ones) were likely to be much less serious than for individual cases. While formal verification procedures were not part of the inspection methodology, such procedures could be incorporated into future methodologies: for example by having dwellings inspected by two different inspectors and comparing the results, or by having a team of experts (e.g., engineers) verify the inspectors' work and identify the source and direction of any errors.

5.0 CONSULTATIONS WITH HOUSING EXPERTS AND AGENCIES

5.1 Approach

A number of housing experts and agencies were consulted for their views on a National Survey of Housing Conditions. These consultations took two forms. First, a presentation was made to the National Housing Research Committee on May 18, 1990. At this meeting, representatives of a variety of housing organizations and federal government departments were given an overview of the project. Second, 23 housing agencies, including all provincial housing authorities, were mailed a brief questionnaire asking for their views on the survey objectives, priorities for research questions, survey approach and sampling. A total of 13 agencies responded, including six provincial housing authorities. A list of these organizations is presented in Appendix B.

5.2 Findings

The organizations which responded to the consultation questionnaire expressed a great deal of support for the idea of conducting a national housing survey. They indicated that data on housing conditions and repair needs which could be compared across different regions of the country, tenure types, household types, etc. would be extremely useful for program planning, evaluation and policy development purposes. There were mixed opinions regarding the form the survey should take. While some supported a comprehensive, dedicated housing survey, others felt that a supplement to an existing survey (e.g., Statistics Canada Census or HFE Survey) would be the only financially feasible approach. Virtually all agencies noted the importance of having technical inspection data for at least a subsample of cases to supplement survey responses. Many respondents, in particular those representing provincial housing authorities, offered specific suggestions for the size and type of the survey sample.

The information provided by the housing agencies on the major topics covered in the consultations is summarized in the rest of this section.

Survey Objectives

The organizations were asked to outline their objectives for a survey of residential housing conditions. In response, they noted a variety of information needs, including the following:

- accurate information on housing conditions and repair needs which could be tracked over time and compared for different regions, urban versus rural areas, tenure types, building construction types, and household characteristics;
- the need for more accurate data on physical house condition to be used in the calculation of core housing need;
- shelter costs, housing affordability and availability of shelter alternatives; and
- information which could be used for program planning, evaluation and policy development.

Research Issues and Questions

Agencies were asked for their comments about a preliminary inventory of research concepts for the survey that had been prepared by Ekos Research. This inventory included building characteristics, the physical condition of all aspects of the building (interior and exterior) and site, the physical and community environment, dwelling suitability and affordability, maintenance and repairs. Although most of these concepts were regarded as important by at least some of the agencies consulted, some research priorities do emerge from the reactions of the group as a whole.

High priority research issues include the following:

- building characteristics, such as age, spatial characteristics and occupancy/tenure;

- physical condition of the building exterior (e.g., foundation, walls, structures, doors and windows), building interior (e.g., basement, interior walls, floors and ceilings), and mechanical systems (i.e., plumbing, electrical and heating);

- dwelling suitability, taking into account factors such as crowding, house design, and the extent to which special needs are met;

- dwelling affordability, including household income, shelter costs, and availability of shelter alternatives; and

- maintenance and repairs, including occupants' responsibilities and practices, past expenditures, the need for minor and major repairs, and intentions to renovate (including plans for financing renovations).

The issues which appear to be of secondary importance to agencies are as follows:

- physical condition of the site (e.g., landscaping, fences, paths and drainage), equipment and appliances, lighting, and interior physical environment (e.g., air quality, noise, moisture and exposure to sunlight);

- health and safety items such as security systems, fire suppression systems, smoke/heat detectors, fire exits, presence of toxic materials, and garbage disposal; and

- the environment, including the exterior physical environment, community social environment, community services and community infrastructure.

The inventory of research issues and concepts, revised to reflect the opinions of the housing agencies consulted, is presented in Appendix A.

Survey Approach

Opinions differed about the form the survey should take. While some supported the idea of a comprehensive, dedicated housing survey, others expressed a preference for a supplement to an existing survey such as the Statistics Canada Census or HFE Survey (financial feasibility was a major concern). Many expressed no preference or were unsure about whether the survey would be best administered by telephone, mail, or interviewer/enumerator. However, virtually all agreed that technical inspection data for at least a subsample of the cases would be an essential component of the survey.

Sampling

Finally, the agencies were asked to describe their sampling requirements. In general, they noted that the sample should be large enough to yield reliable data. Some respondents, in particular the provincial housing corporations, were quite specific in these regards. Estimates of the required sample size for a particular province ranged from 2500 to 9000 cases. Regarding the proportion of the sample for which technical inspections should be done, percentages ranged from 10 to 25 per cent. Many also noted that the sample should be designed to facilitate comparisons by variables such as tenure, province, county, municipality, urban versus rural areas, building age, household income, first time homebuyer versus "move up" buyer, and client group (e.g., senior citizens, disabled persons, families, single parent families, singles and youths).

6.0 INSTRUMENT DEVELOPMENT FOR THE PROPOSED NATIONAL SURVEY OF HOUSING CONDITIONS

6.1 Approach to Instrument Development

Matching Data Collection to Respondent

An extremely important consideration in any research endeavour is matching information requirements with the appropriate data sources. We have carefully considered the information requirements of this study and the most appropriate sources for collecting the data. In this case, it is clear that to collect the data required to address all research issues, three research exercises are required: a survey of occupants, a survey of landlords of rental buildings and a technical inspection of dwellings and buildings. Each component is designed to provide information which the other components would not provide or would do so inadequately. Occupants will be able to provide data on the affordability and suitability of their dwelling, the adequacy and performance of the building components, and on the characteristics of their household. They will not be able to provide detailed or reliable information on the physical condition of the dwelling or building. These data and detailed repair cost data will be collected through technical inspections, conducted either by housing inspectors or interviewers trained for this purpose. The landlords or building managers will be in the best position to provide data on the building characteristics, repair and maintenance responsibilities, and repair, maintenance and renovation expenditures.

Building on Existing Methods

Our approach attempts to represent an integration of the methods and questions that have proven to be the most useful and successful in previous surveys of housing conditions. While the survey instruments are new, virtually all of the constituent items in the instruments have been used in previous studies. The considerations for selecting survey items included need for the information, "collectability", the track record in previous surveys (especially data quality), amenability to analysis and comparability to other data.

Linkages between Instruments

Most of the most important research issues will be addressed by each of the survey components (i.e., the survey of occupants, the survey of landlords and the physical inspection). Through the use of similar items or items which address equivalent issues, the survey will produce data from different sources which can be compared and cross-referenced for individual dwellings or groups of dwellings. "Triangulating" data in this manner will help to ensure that the information provided by this survey is reliable and valid.

Ratings of Physical House Condition

The proposed approach for the assessment of physical house condition and housing adequacy uses a careful blend of four types of measures: judgemental condition ratings by experts; descriptive and objective characteristics of the dwelling; occupant (and landlord) ratings of the performance of building components and systems; and occupant ratings of the adequacy of their dwelling.

Improvements, additions and conversions to enhance a dwelling are not explicitly dealt with in these questionnaires (although a dwelling that was too small for the occupants could be identified with the data collected). However, these important types of renovation activities should be considered in future versions of the instruments if comprehensive estimates of renovation activity and expenditures become survey objectives. Additional questions to deal with these issues could probably be accommodated in a (longer) self-administered type of occupant survey instrument.

The judgements of experts — as expressed through ratings of physical condition — are crucial to an assessment of overall physical house condition. Scaled questions about the dwelling condition and need for repair provide the technical expert with the opportunity to provide a highly informed judgement, based on his or expert with the opportunity to provide a highly informed judgement, based on his or her experience and expertise, which takes all of the competing factors into account. These types of scaled questions can be applied to both very specific building components (which can then be summarized) and to the building as a whole. In the instruments appended to this report, scaled ratings for both detailed building components and for the overall building condition are included in the technical inspection instrument. On the occupant (tenant and owner) instruments, scaled condition ratings are limited to overall ratings.

Descriptive and objective characteristics of the dwelling will be collected from the both occupants and technical inspectors. These items include factual information about the dwelling/building such as its size, age, construction type, special features, etc.. Questions about the presence or absence of specific problems such as cold air drafts, moisture leakages, and pests are also included.

Without the application of formalized testing procedures, ratings of the performance of building components and systems are best provided by the people who live in the dwelling. They are the only ones in a position to evaluate the dwelling over an extended period of time and to give indications of mechanical problems in systems that may appear to be structurally sound. Questions about the performance of building components and systems are phrased to ask about the incidence and frequency of breakdowns (or periods of inadequate operation).

Ratings of the adequacy of the dwelling can be very subjective. Whether a particular dwelling suits the needs of the household is up to the members of the household to decide. For example, in previous studies we have seen that the relationships between perceptions of crowding and objective standards such as the National Occupancy Standard are not necessarily very strong. However, it is the occupant who is in the best position to report whether the dwelling is satisfactory for the needs of the household. Questions about dwelling adequacy, intended for the occupant, are based on scaled ratings of satisfaction with different aspects of the dwelling.

Seven-Point Scales

There are two considerations for determining the most suitable form of rating scale to be used: data collection and data quality. We strongly believe that seven-point rating scales are the most appropriate type of numerical rating scale for the present research endeavour. Perhaps the most important reason for using seven-point scales is that they greatly increase the range of analytical techniques which can be used. Seven-point scales yield interval level data, which can be analyzed through sophisticated parametric techniques such as multiple regression. Scales with fewer points provide only ordinal or nominal level data; these require the use of less powerful and less flexible (usually) non-parametric statistical techniques.

Seven-point scales have a number of other important characteristics which make them superior to scales with fewer points. They provide more valid data (i.e., the indicator more accurately measures the underlying concept) than scales with fewer points because they better measure the real variation among respondents.[1] In addition, they are more reliable (i.e., the measures are more likely to yield the same result on repeated trials). It has been conclusively demonstrated that the reliability of rating scales increases as a function of the number of steps. The increase in reliability is very rapid as the number of scale steps increases from two to 20 but tends to level off at about 7. After about 11 steps there is little gain in reliability from increasing the number of steps.[2]

Numerous authors point out that for scales with more than five points, verbal descriptions should not be attached to each point. Instead, terms should be used to describe the midpoint and the extremes of the scale and numbers should be used to represent the points along the continuum. A visual depiction of the scale should be provided.[1] This is precisely the approach which we have adopted. As some people may find it difficult to answer in terms of numbers rather than give their opinions, interviewers must be trained to probe and correctly code respondents' answers.

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[1] Fowler, F.J. Jr. *Survey Research Methods*. Beverly Hills: Sage Publications, 1984, p. 96 and Moser, C. and G. Kalton. *Survey Methods in Social Investigation*, New York: Basic Books, 1972, p. 359.

[2] Guilford J.P. *Psychometric Methods*. New York: McGraw-Hill, 1954 in Nunnally, Jum C. *Psychometric Theory*. New York: McGraw-Hill, 1978, p. 595.

Another characteristic of the seven-point scale is that it provides a midpoint which enables respondents to better anchor their response. In the case of a satisfaction scale, the midpoint is "neither satisfied nor dissatisfied". Some researchers like to push respondents toward one end or the other of a scale, arguing that very few people are genuinely indifferent.[2] We believe that it is important to reserve a middle or indifferent point for respondents who insist on taking a middle position or who are undecided or indifferent about the two ends of the continuum or whose response is a combination of the two ends of the scale (e.g., they are satisfied with some aspects of the component rated and dissatisfied with others and are therefore neither satisfied nor dissatisfied overall).

The size of the response to the middle category can give extra information about the intensity of attitudes — information that might be absent in a forced-choice situation. In a forced-choice situation, people are expressing opinions for or against the attitude object, even though the strength of their opinions is very low. This introduces some bias into the data.

Including a middle point on a scale does not affect the ratio of "pro" to "con" responses or the size of the "don't know" category. However, a scale with a larger number of points will usually have a smaller percentages of responses to the midpoint than a scale with fewer points (e.g., a seven point scale will have fewer responses to the midpoint than a five point scale). The inclusion of the middle category does not typically change the relationship between responses to the scaled items and background characteristics such as the respondent's educational level.[1]

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[1] Sudman, S. and N. Bradburn. *Asking Questions*. San Francisco: Jossey-Bass Publishers, 1980, p.149, 156-7 and Paul B. Sheatsley. "Questionnaire Construction and Item Writing," *Handbook of Survey Research*, edited by Rossi, P.H.; J.D. Wright, and A.B. Anderson. New York: Academic Press Inc., 1983, pp. 195-230.

[2] Fowler, p. 157.

Division of Technical Evaluation into Two Components

We recommend that the technical evaluation of housing conditions be split into two components:

1) an overview inspection, which would be conducted either by housing inspectors or by trained interviewers; and

2) a more detailed inspection for large multiple-unit buildings and complex building systems and problems, using a "technical audit" type of approach.

The overview inspection instrument that has been developed for this project is similar to the instruments used in the various low-rise studies conducted by CMHC throughout the 1980's (e.g., 1980 Ottawa Pilot, 1983-84 RRAP Evaluation, 1986 National Housing Survey, etc.). This type of inspection methodology has proven to be adequate for determining the physical adequacy, rehabilitation needs and repair costs for low-rise buildings, but is inadequate for determining the condition and repair costs of large buildings such as high rise apartments with more complex systems and problems.

To evaluate the physical condition of all types of buildings in the housing stock, a methodology must be developed which addresses the deficiencies of existing methods. A technical audit type of methodology, which could be applied generally (i.e., to all high rise buildings) as well as to specific problems (e.g., energy efficiency, condition of parking garages, radon gas or toxic material testing), could be developed for a subsample of buildings in the survey to be conducted. This type of methodology would be very important if the calculation of the overall repair costs of the stock is required and to address other issues such as the potential dislocation of tenants during periods of repair and the market availability of units. However, such a methodology would be complex, requiring a rigorous design phase. It should probably be viewed as an addition to any proposed national survey rather than an integral component. We recommend that the methodology and instruments for conducting such complex inspections be based on the existing work of the Research Division of CMHC.

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[1] Schuman, H. and S. Presser. *Questions and Answers in Attitude Surveys: Experiments on Question Form, Wording, and Content*. New York: Academic Press, 1981, p. 169.

The physical inspection instrument we have prepared and which is included in Appendix C of this report is designed for the overview inspection. We have not prepared an instrument for a more detailed technical audit.

6.2 Overview of Instruments

Four survey instruments have been developed: two for occupants (one for homeowners and one for tenants), a questionnaire for landlords, and a technical inspection instrument. All instruments utilize three types of question formats: (1) questions requiring a number for a response (e.g., the number of floors in the building); (2) questions with pre-coded response categories (e.g., yes or no, type of fuel used to heat dwelling - oil or kerosene, piped gas, electricity, etc.); and (3) questions which ask for a rating on a seven-point scale (e.g., a scale from 1 to 7 where 1 means *Beyond Repair/Replace*, 7 means *Top Condition*, and the mid-point 4 means *Minimum Acceptable Condition*). In this section, we provide a brief overview of the content of each of these survey instruments. Copies of the full instruments are presented in Appendix C.

Occupant Questionnaires

Two virtually identical instruments were developed to survey occupants: one for renters and one for homeowners. These instruments differ only in minor ways; for example, the instrument for renters includes a question on the amount of rent paid, whereas the homeowner questionnaire asks about mortgage payments and current market value of the dwelling.

The instrument for renters is comprised of 39 questions (or 113 individual survey items), and the homeowner questionnaire consists of 44 questions (or 115 items). Both instruments are divided into the following six sections:

- dwelling and household characteristics (e.g., type of dwelling, number of floors and rooms, and age of building);
- performance of building/dwelling systems (e.g., characteristics and frequency of breakdown of plumbing, electrical system, heating and elevators, as well as satisfaction with equipment and facilities);
- adequacy of dwelling (e.g., satisfaction with aspects of dwelling interior and neighbourhood, and perceptions of safety of neighbourhood);
- physical condition and need for repair (e.g., physical condition and repair needs of dwelling interior, dwelling exterior and mechanical systems, and problems with cold air drafts and water leaks);
- shelter costs and finances (e.g., rent/mortgage payments, household income, and degree of difficulty in meeting shelter costs); and
- characteristics of the household (e.g., age, gender, employment and family relationships of occupants, and disabilities requiring special structures or facilities in or around dwelling).

Landlord Questionnaire

The questionnaire for landlords is similar in many respects to that for occupants, with the major exceptions that it focuses on questions of particular relevance to landlords (e.g., building revenues) and includes more detail on renovation history. This instrument consists of 36 questions (or 152 items), and covers the following five areas:

- building characteristics (e.g., type of apartment building, age and size of building, number of floors and units of different types, rent for different types of units, and safety and security features);
- physical condition and need for repair (e.g, condition and repair needs of building interior and exterior, mechanical systems, elevators, and fire/security systems);
- renovation history (e.g., breakdowns or problems with the building interior and exterior, mechanical systems, etc. in the past 12 months, repairs or improvements (along with expenditures) to any of these areas, maintenance practices, and satisfaction with tenants' contribution to building maintenance);
- building costs and finances (e.g., building price, principal outstanding on mortgage, building revenues and expenses, and current market value of building); and
- landlord characteristics (e.g., employment status, household income, education and year of birth).

Technical Inspection Instrument

The technical inspection instrument (consisting of 55 questions, or 114 items) is designed to obtain basic descriptive information, such as type of building, floor space, number of dwelling units and age, as well as characteristics, condition ratings and estimates of needed repair costs for all aspects of the building, including the following:

- building exterior (e.g., walls, roof, structures, doors and windows);

- basement and floors below grade (e.g., floors, foundation walls and insulation);
- mechanical systems (e.g., heating, electrical, ventilation and plumbing);
- common areas (e.g., entranceways, hallways and parking area);
- ground floor and upper floors/units (e.g., floors, stairs, walls, ceilings, water entry, fire hazards, kitchen facilities, and bathroom equipment); and
- overall building (e.g., overall condition and quality of maintenance).

6.3 Instrument Simplification

The instruments presented in this report have been designed so that they could be modified without great difficulty for different methods of administration. For a self-administered (e.g., mailout) application the occupant and landlord instruments could be expanded; conversely, for a telephone survey they could be shortened in length. The form of the final instruments can only be determined once the components of the complete research design have been established.

Based on the results of previous research and on consultations with provincial housing authorities and other agencies, we have differentiated between draft questionnaire items that are "mandatory" and those which might be discretionary or of secondary importance. While this differentiation is undoubtedly imperfect and will not reflect the priorities of all the potential stakeholders, it provides some useful guidance should simplification of the instruments be required.

Surveys of Occupants: Homeowners and Renters

The consultations with the provincial housing authorities and other agencies indicated that the level of interest was somewhat lower for items concerning the aspects of dwelling that were not directly related to physical condition — whether it be from an objective (e.g., breakdown) or perceptual (e.g., satisfaction) perspective. These issues of secondary importance included environmental factors such as the amount of sunlight or noise from outside the dwelling and for items concerning the neighbourhood and broader community. Based on these findings, the following questions could be considered for deletion: Section III, question 19 a to h (interior environment), question 20 a to i (neighbourhood) and question 21 (security). These 18 variables represent approximately 15 per cent of the homeowner and renter questionnaires. If the physical condition survey were linked to another survey such as HFE that already collected data on household characteristics (Section VI) and shelter costs (Section V), then questions 28 to 39 could be excluded; these questions represent approximately 40 variables or 34 per cent of the homeowner and renter questionnaires. Eliminating Sections III, V and VI would reduce the questionnaire size by almost 50 per cent of the variables. The proportionate reduction in interview or instrument completion time would require testing.

Survey of Landlords

Identifying items on the draft landlord questionnaire is entirely dependent on the objectives of the survey to be conducted. For example, at this point in time it is difficult to specify the relative priorities among questions about need for repair, the performance of building systems (breakdowns), building costs and finances and the frequency of inspections of different building components. Some items could probably be reduced, aggregated or eliminated, but this should be done on the basis of pretest results and a further specification of objectives and priorities.

Physical Inspection Instrument

One of the features of the 1980 Ottawa Pilot Study of Physical House Condition was an exhaustive analysis of sources of redundancy in the physical condition data. The results of this analysis demonstrated that there were very high correlations between the condition of the exterior and interior of the dwelling. The conclusion was that interior inspections could be eliminated with a relatively modest loss of measurement precision; the majority of the required information for a dwelling could be collected through an inspection of the exterior for structural and surface conditions and an inspection of the basement area to provide information about mechanical systems. The basement also provides important information on structural integrity and the control of air and moisture. The result of an exterior/basement inspection methodology would be a more cost effective approach that produced relatively accurate data on dwelling conditions and repair need. Detailed interior inspections would only be required if precise estimates of repair costs for a particular building are needed. (It should be noted that the 1980 Ottawa Pilot instruments did not include items on the common areas of multiple unit buildings and the correlations between exterior and interior items were not tested for these variables.)

Based on the administration of an exterior/basement inspection methodology, the following questions could be removed from the draft inspection instrument: questions 38 to 52 inclusive on bathrooms, kitchens, interior floors, stairs, walls and ceilings, and fire hazards. This change would reduce the instrument by approximately 26 items or 22 per cent of the total number of variables.

6.4 Determining Sub-Standard Physical Condition

There are a number of ways in which the proposed instruments could be used to identify whether a dwelling is above or below a particular standard. For the purposes of instrument development the key consideration is to ensure that the data that would be used for such calculations (i.e., the key ingredients) are included in the instruments. The method used most frequently in Canada to determine the number and proportion of substandard dwellings is to identify those dwellings in need of major repair with the Statistics Canada HFE Survey. The proposed survey instruments would permit more complex and flexible methods to achieve this objective. Some examples of alternatives are as follows:

- *Global Rating of Overall Dwelling Condition.* This question consists of a seven-point scale rating of the overall condition of the dwelling; a dwelling would be considered substandard (i.e., in need of repair) if the score was below the rating for the minimum acceptable condition (i.e., below four on the scale). This global scale is an extremely important variable which is usually highly correlated with summary measures (e.g., an additive scale) incorporating the extensive series of individual component and system ratings that precede it. The process of completing these individual component and system ratings informs the inspector throughout the inspection so that the global rating becomes a valid and comprehensive measure of overall dwelling condition.

- *Summary Ratings of Individual Dwelling Components.* The extensive series of seven-point scale ratings of individual dwelling components can be aggregated into summary measures of overall dwelling condition. The dwelling can be considered as physically substandard if the overall average score falls below a predetermined threshold.

- *Failure on Mandatory Items.* A dwelling can be considered to be physically inadequate if it fails on any one of a number of mandatory repair items; this approach is similar to the one used for determining repair need in the Residential Rehabilitation Assistance Program (RRAP). For example, in addition to the requirement for structural integrity, a dwelling could be considered inadequate if it failed on any of the following items: health and safety, electrical system, plumbing and heating. Ratings for all of these items are included on the inspection instruments; performance information for most of the items is included on the occupant instruments.

6.5 Determining Total Repair Cost

The total repair cost for a dwelling may be determined by totalling the repair costs for each of the items inspected, with the exception of the following:

- overall building exterior;
- overall mechanical systems;
- overall interior; and
- overall building.

These items are summaries of items for which ratings and repair costs have already been provided. Otherwise, all items are distinct from one another. These overall repair cost items are included to deal with situations in which the inspector can not readily provide a breakdown of the individual repair costs.

The training sessions and materials for any survey must include a review of each of the items to clarify any ambiguities concerning the meaning of each of the cost items and the components or systems which are to be rated.

7.0 SURVEY ADMINISTRATION

7.1 Survey Administration Options

There are several alternative methodologies that could be used for the proposed National Survey of Housing Conditions. These options vary in a number of ways including method of survey administration, the quality and quantity of data that could be collected, the characteristics of the sample and the potential costs. In this section we have tried to present a very brief overview of what are probably the major survey options. We also review some of the advantages and disadvantages of these options. Because there are many factors that can affect survey costs, we have not attempted to provide costs for the options at this time. The five options discussed are summarized in Exhibit 7.1.

The planning of the survey administration is but one component of the broader research design work. This work includes the identification of the study issues and establishing priorities among these issues, instrument development and sample design. Instrument development, the principal objective of this preliminary project, cannot be completed independently of these other components of the research design. Before any of the options discussed in this section are selected, we would strongly recommend that further work be initiated to prepare a comprehensive research design. This work should include the refinement and testing of the survey instruments and the preferred methods of survey administration.

HFE Telephone Survey

This option is currently being explored by Statistics Canada for CMHC. It consists of a Statistics Canada-administered telephone survey, conducted as a fourth component of the annual HFE surveys (using the HFE sample). The occupant instrument for such a survey could include between 50 and 100 variables. Ten to 15 per cent of the dwellings in the sample would also undergo a technical inspection (e.g., conducted by CMHC inspectors) to deal with physical condition, need for repair and repair costs. This survey could be conducted annually.

EXHIBIT 7.1
Overview of Five Options for a National Survey of Housing Conditions

Option	Method	Approximate # of Variables	Inspection Methodology	Frequency of Administration
HFE Telephone Survey	• telephone survey (i.e., HFE fourth sample)	• 50 to 100	• 10 to 15% technical inspection subsample • technical audit subsample	• could be administered annually in conjunction wither HFE surveys (annually)
Telephone Survey	• interviewer-administered occupant interview	• 50 to 100	• 10 to 15% technical inspection subsample • technical audit subsample	• every two to five years
Site Survey	• interviewer-administered occupant interview	• 100 to 200	• technical skim for entire sample • 10 to 15% technical inspection subsample • technical audit subsample	• every two to five years
NHS-Type Mail Survey	• telephone identification of sample (RDD) • self-administered mail survey	• 100 to 200	• 10 to 15% technical inspection subsample • technical audit subsample	• every two to five years
Hybrid Telephone Housing Survey	• add-on to HFE survey • self-administered mail survey	• 10 to 15 for phone component • 100 to 200 for mail component	• 10 to 15% technical inspection subsample • technical audit subsample	• phone component could be done annually • every two to five years for mail component

The major advantage of the HFE Survey option is that the data base would be linked with all of the detailed HFE data on household characteristics, socio-economic data, household facilities and equipment, etc.. There would be no additional cost for collecting these data. A disadvantage would be the lack of control. For example, CMHC (or other agencies) would not have direct access to the data base for sample manipulation (e.g., weighting by target market areas) or for conducting specialized analyses. The issue of managing the inspection survey could also be problematic.

Dedicated Telephone Survey

This survey option is essentially identical to the previous one except that the survey would not be conducted by Statistics Canada. (The relative costs of the two alternatives would need to be determined.) Nationally (and provincially) representative samples of homeowners and tenants would be generated through a random digit dialling (RDD) procedure. Technical inspections would be conducted for 10 to 15 per cent of the sample. More detailed "technical audit" type inspections could also be conducted for a small subsample of complex (e.g., high rise) buildings and to deal with specialized technical problems.

An advantage of this telephone survey option would be its flexibility. The sample could be modified or augmented relatively easily and special target groups could be identified for extra attention (e.g., increased sampling or additional questions). It could also be conducted relatively quickly.

A significant disadvantage of a telephone survey, particularly for one which is intended to be replicated over a long period of time, is that telephone survey response rates have been dropping in recent years. This trend could jeopardize the quality of survey data over the long term.

Site Survey

With this survey option, interviewers would collect the data in person. The instrument could be considerably longer than for the telephone survey options — anywhere from 100 to 200 variables. The interviewers could also be trained to conduct a brief technical inspection (a "technical skim") of dwelling conditions. These technical skims would be conducted for the entire sample. In addition, 10 to 15 per cent of the sample would undergo a more detailed technical inspection, mainly because trained interviewers cannot collect valid and reliable data on repair costs or the condition of mechanical systems. Technical audits could also be conducted for complex buildings.

The advantage of the site survey would be the quantity and quality of the data. More questions could be asked than with a telephone survey and specialized questions that require interview training could be included. The information collected from the technical skim inspections for the entire sample would be very useful, facilitating analyses of repair need with greater precision for smaller geographic areas.

The major disadvantage of the site survey would be cost. Travel and field time costs would be more expensive, even with a cluster sample approach that limited the amount of travel. However, these costs might be offset somewhat by a reduction in the proportion of the sample requiring full inspections by technically trained personnel.

NHS-Type Mail Survey

For this option, a representative sample of dwellings would be identified through a telephone survey using random digit dialling (RDD) techniques. The telephone component would be used to screen potential respondents, to seek agreement to participate and to collect the names and addresses of tenants, occupants and landlords who agree to participate. Tenants could also be asked to identify landlords for subsequent contacts to maximize the opportunities for linking data sources for the same buildings. Once the sample is identified and a mailing list compiled, the questionnaires would be mailed to the respondents. The survey instruments could contain between 100 and 200 variables. Again, 10 to 15 per cent of the dwellings would be selected for technical inspections; for a smaller subsample technical audits could be conducted.

The NHS-type mail survey option represents a good balance of data quality and costs.[1] It has been shown in a previous national application to offer flexibility and to provide high quality data (with self-administered questionnaires) at a reasonable cost.

Combined HFE Telephone / NHS-type Mail Survey

This approach combines elements of the HFE telephone survey and the NHS-type mail survey. This would include a small addition to one of the three current HFE surveys: for example, 10 - 12 questions to supplement the single need for repair question currently used. This could be conducted annually to provide a regular profile of physical condition and repair need (as well as the other HFE information used to calculate such things as core need). The NHS-type mail survey would be as described above, to be administered periodically (e.g., every two to five years). During the first iteration of the survey, the HFE supplement and mail survey would both be conducted. This would permit a detailed analysis of the validity and reliability of the questions included as part of the HFE supplement. We would not expect that technical inspections would be required for the HFE cases; this component could be limited to the mail survey sample.

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[1] The National Landlord Pilot Study, conducted in 1985-86 as a preliminary study for the National Housing Survey, demonstrated that two methods of survey administration would be viable options for the landlord component of the proposed national survey: telephone and self-administered mailout. The in-person interview method was not preferred by landlords; it was also the most expensive method of conducting these interviews. A second preliminary study for the National Housing Survey, the Pre-test of a Telephone Method to Solicit Participation in the CMHC National Occupant Survey, demonstrated that a survey methodology using a combination of telephone sample generation and a self-administered mailout questionnaire could be used successfully at a lower cost than the cluster sample/in-person interview methodology originally proposed. Given the objectives of the NHS and the resources available for the study the combined telephone/mailout methodology was adopted.

With testing, the HFE additions would be a substantial improvement over the existing single question for estimating repair need and physical house condition. This improvement would facilitate more accurate estimates of housing conditions. The annual administration of the HFE survey would be a significant advantage. The more comprehensive mail survey would still be the primary vehicle for addressing questions about the condition and adequacy of the national housing stock.

7.2 Survey Training

All surveys require training for the interviewers and field staff. Some of the topics that should be dealt with in any training session include the objectives of the study, sampling procedures, the survey instrument, administrative procedures, reporting and communication, interviewing skills, and instrument completion and coding. For a major national survey with field staff operating from several locations the training component must be given a very high priority.

For the proposed housing survey, the training for the technical inspection is the most important component of the methodology. Rating scales based on expert judgements are a highly effective means of collecting physical condition and need for repair data. However, for the data to be valid and reliable field staff must be trained to use the scales in a consistent manner. It is essential that inspectors (or interviewers/enumerators) share a common understanding of the survey items and of the standards to be applied in rating dwelling components and systems.

The training should include classroom instructions and discussion, as well as site visits and debriefings. A standardized training package should be prepared for distribution to all survey staff; this package can also be used as an agenda or set of guidelines for the training sessions. Finally, it also important that the trainers share a common understanding of the training objectives and training session content.

This will require extensive briefings and preparation prior to finalization of the training schedule.

Content and Format of Training

Technical Inspection

All the survey options presented above involve technical inspections to be conducted by housing inspectors. The reliability and validity of the condition ratings and repair costs will depend on the inspectors having a thorough and consistent understanding of what elements are to be considered in rating the physical condition of a dwelling, what each of the points on the rating scale means in terms of the condition of the item being rated, how repair costs are to be determined etc.. A two-day or three-day training session with perhaps one day devoted to site visits and ratings of dwellings will be an important means of ensuring that the inspections yield high quality data.

The training session should include discussions of the following:

- definitions of important concepts (e.g., housing exterior, interior and mechanical systems, housing structure versus housing surface, physical condition versus tidiness of the dwelling etc.);

- proper protocols for contacts with the occupant (e.g., explaining the purpose and format of the inspection, answering questions etc.);

- procedures for the actual inspection (e.g., the order in which various aspects of the dwelling should be inspected, what to do if access to any significant part of the dwelling is denied, notifying occupants of fire hazards etc.);

- question types and examples (use of condition scales, calculation of repair costs).

The training session should also include a one-day session in which the trainer and the inspectors jointly go through a dry run inspection. This will help to ensure that the inspectors apply the knowledge acquired in the classroom in a consistent manner.

Technical Skim

The site survey includes a technical skim to be conducted by interviewers at the time of the occupant interview. As the interviewers will generally be unfamiliar with rating housing conditions, a training session will be of the utmost importance. This session should last three to five days. In addition to covering the topics mentioned above, the session should include an overview of the major dwelling components and systems, a detailed discussion of the determinants of physical condition of various components of the dwelling (i.e., what constitutes a minor versus major repair need?) and an item by item review of the survey instrument.

8.0 RECOMMENDATIONS FOR METHODOLOGY DEVELOPMENT AND SURVEY IMPLEMENTATION

We recommend that the work towards implementation of a full National Survey of Housing Conditions be conducted in four phases. These phases, which are briefly summarized in this section, are as follows:

- further discussions and consultations with provinces and housing experts;
- complete research design and methodology development;
- major pilot study of the methodology;
- implementation of the national survey.

As with the survey options presented in Section 7.1, a great many factors can affect the costs of these different steps and we have not attempted to provide specific estimates at this time. However, it is important to remember that the proposed national survey of housing conditions should represent a rationalization of existing expenditures rather a new and additional cost for housing research. A great deal of money is currently spent in this area, considering the various Statistics Canada surveys, housing program evaluations and specialized research projects. It is possible that a well designed national survey, once operational, could be conducted with the level of resources currently devoted to different data collection efforts.

Further Discussions and Consultation

The results of this preliminary project to develop draft survey instruments and a background report should be the basis for further discussion and consultations with CMHC, provincial housing authorities and other interested parties. The results of this study summarize the initial conceptualization of the project and should be the basis for a lively and informed debate, perhaps initially among members of the National Housing Research Committee and subsequently among a broader group from the agencies that they represent.

Research Design and Methodology Development

Prior to survey implementation there must be a comprehensive research design and methodology development phase which addresses instrument design, sampling, survey administration, training, data processing and any other issues in a comprehensive manner. The results of the discussions and consultations with provincial housing authorities and housing experts should guide the further developments and decisions concerning the selection of methodological options.

It is unlikely that there would be a consensus among all interested parties about the preferred methodological options; differing levels of interest, variable budgets and uncertainty and a lack of information will work against a quick resolution to all of the problems that must be addressed before survey implementation. There may be a need for some results from a pretest or pilot study before a commitment is possible. However, the process of designing the survey methodology can be streamlined if the consultation process succeeds in obtaining as wide a consensus among the potential partners as possible about the survey objectives and methodology. This will reduce the need for a multi-stage developmental effort that could take a great deal of time. The report produced by such a study would also serve as a focus for further debate and negotiation.

The research design phase should be used to solve problems and difficult issues such as areas identified earlier in this report as requiring further development. These include the common areas of multi-unit buildings, the extension to the high rise stock (for technical inspections), the extent of neighbourhood and community data to be collected, and the need to deal with new substantive areas such as noise, environmental hazards and toxins, recreational areas and greenspace, etc.. The research design should establish the parameters for the initial survey. It should also produce a measurement system that can be adapted to meet new information needs and priorities.

The research design work should include the development of training materials for the household, landlord and technical surveys. In areas for which there is still some uncertainty pending pretest or pilot study results, the training materials should provide an overview discussion for later elaboration.

There may be some advantage to conducting a small pretest of the instruments at this stage of the work to minimize the need for changes that result from the pilot study that is recommended. This pretest would help evaluate the clarity of survey questions, question sequencing, and any problems with administration of the more demanding instruments intended for on-site administration (e.g., technical inspection).

Major Pilot Study of the Methodology

Subsequent to the research design and methodology development phase and prior to full-scale implementation of the survey at a national level, we recommend that a major pilot study be conducted. This study could be similar to the 1980 Ottawa Pilot Study and the 1985 National Landlord Pilot Study. The 1980 Ottawa Pilot Study included approximately 500 cases and tested different measurement options including data collected from occupants, trained interviewers and technical inspectors. The 1985 NHS Landlord Pilot, which included approximately 550 tenant and 300 landlord cases, evaluated different methods of administration for the landlord component of the 1986 National Housing Survey.

A major pilot study would permit a major field trial and final test of the survey methodology. Such a study is essential to debug and finalize the methodology for the survey. It is required for several reasons including the importance of the proposed national survey (and the possible costs of design errors), the number of new (or reorganized) questions or question sections in the instruments, and the need to evaluate the advantages of the proposed measurement and administration options prior to full implementation.

The pilot study should include tests of different measurement alternatives and survey administration approaches. The results of this pilot would provide empirical data concerning methods and instruments that would answer outstanding questions posed by potential clients and partners. The testing should also be coordinated with work planned by the Societé d'habitation du Québec, which has expressed a strong interest in beginning a new survey of housing conditions in 1991.

National Survey

A national survey could be implemented in 1992 if the previous phases were successful and if the various partners demonstrated the necessary commitment.

APPENDIX A

ANNOTATED BIBLIOGRAPHY

Annotated Bibliography

Abt Associates Inc. *Measurement and Prediction of Housing Condition and Rehabilitation Need*, prepared for the United States Department of Housing and Urban Development, Cambridge, Mass., 1981.

The report presents the results of a study designed to test new methods for assessing housing condition and the need for rehabilitation in the United States' housing stock. An interview similar to the Annual Housing Survey was administered to an adult member of each household in the sample, and a physical inspection of the dwelling was then completed by a trained evaluator. Using data from 290 dwellings in Boston, Mass., the study derived several measures of housing condition, rehabilitation need, and rehabilitation cost. There were several sample restrictions. First, only dwelling units located in one to four family structures were chosen. Second, neighbourhoods where the 1970 proportion of housing units in one-to four-family structures was less than 33% were excluded. And finally, to avoid the possibility of units needing no repairs being over-represented in the sample, those with occupants whose mean estimated 1979 family income was greater than $12,000 were excluded. Comparisons indicated major discrepancies between what occupants and trained inspectors said about the dwellings.

Abt Associates Inc. *Codebook for the Annual Housing Survey Data Base*, prepared for the United States Department of Housing and Urban Development, Cambridge, Mass., 1988.

This codebook provides the complete documentation for the AHS data; it includes sample instruments, lists of variables, data base specifications, and a discussion of technical matters related to data base management.

Anderson, James R. and Weidemann, Sue. *An Instrument to Measure Residents' Perceptions of Residential Quality*. University of Illinois, presented at International Conference on Environmental Psychology, Surrey, England, 1979.

This reports on the development of a concise instrument to measure residents' perceptions of their housing environment and the use of that instrument at a single multifamily housing site. The data from the 220 item instrument was examined by principal component analysis. The result of this was 25 components. Examination of these reveals consistency with expectations based upon prior work. The information gained was used to help set priorities for modernization of the housing site.

Australian Bureau of Statistics. *Census 86—Summary Characteristics of Persons and Dwellings*. Commonwealth Government Printer, Canberra, 1989.

This publication is one of a series containing results from the 1986 Census of Population and Housing for each State and Territory and for Australia. However, the Census does not contain a need for repair question. Australian government agencies do not collect nor publish data on the need for repair or maintenance to the Australian housing stock, mainly because almost 70% of Australian dwellings have been built during the last 30 years.

Bureau of Statistics, Prime Ministers Office. *Housing Survey of Japan*, 1983.

To clarify housing conditions in Japan, the Housing Survey has been conducted every five years since 1948. The 1983 survey is the eighth in the series. Due to recent changes in housing conditions, the questionnaire used in this study placed emphasis on the quality of housing conditions such as uses of rooms, a change of living quarters, living standards of the households and the environment surrounding the dwellings. The questionnaire, distributed and later picked up the enumerators, was completed by a member of each household in the sample. In addition, the enumerator recorded the building's need for repair on a 3-item scale.

Chen, Alexander and Newman, Sandra. *Validity of Homeowners' Housing Evaluations, The Gerontologist*; (1987) volume 27, number 3.

This paper was funded by the U.S. Department of Housing and Urban Development to determine the validity of older home-owners reports of repair status. This was done by comparing their assessments with housing inspection records. Although the observed agreement is high, the ability of older homeowners to provide valid assessments of home repair status is overestimated because most of this agreement is due to chance. In addition, older homeowners are least likely to provide valid reports when repairs are needed.

Clayton Research Associates Ltd., *Residential Renovation Data*, Ottawa, CMHC, February 1989.

This study reviews the existing data on residential renovation in Canada and identifies areas where additional data would be useful. One of the six types of renovation data examined is the state of repair of the dwelling stock. In this area, only the three main data sources are considered: the Census of Canada, the Statistics Canada Household Facilities and Equipment Survey and the CMHC National Housing Study. Because of the inconsistency of the findings on the need for repair from these various surveys, the report recommends that a common format be developed for the questions to ensure that the data from all sources are comparable.

CMHC. *The Performance of Housing: Canadian Experience in Studying it and Putting the Results into Effect; A Technical Background Paper.* Prepared for The Canada/Japan Housing Committee, June 1981.

This is a short discussion paper on CMHC's involvement in conducting and sponsoring post-occupancy evaluations. It includes a brief examination of the Monitoring Inspection System used to evaluate the quality of housing rehabilitated through the Residential Rehabilitation Assistance Program.

CMHC. *Residential Rehabilitation Assistance Program Evaluation*, 1986.

The evaluation of RRAP was conducted to assess the performance of the program since it was introduced in 1973. Physical inspections of dwellings which had received RRAP funding were conducted by trained inspectors. A mail survey of owners/residents of dwelling units which were rehabilitated under RRAP was also undertaken.

CMHC. *Inspection Training Session for the Public Housing Physical Condition Survey*, 1988.

This document is the training session manual and inspector's field guide for conducting the physical inspections conducted as part of the Public Housing Program Evaluation. It provides a sound model for the type of inspector training session that would be conducted as part of any proposed national survey of housing conditions. It presents a discussion of the objectives of the survey, a discussion of the key concepts, a review of the inspection instruments and instructions for instrument completion and conducting fieldwork.

CMHC, Canadian Housing Information Centre. *Bibliography on Housing Quality*. Revised, January 1988.

This is a complete unannotated bibliography of all publications on housing quality found in the CMHC library. It is revised and updated at regular intervals.

CMHC. *Residential Renovation Overview — Program Evaluation Report*, 1988.

This report is based on the results of the National Housing Study and the Residential Renovation Industry Survey, both done in 1986. It provides a comprehensive review of residential renovation activity in Canada and examines the physical condition of the low-rise housing stock. It also looks at the characteristics and behaviour of firms and property owners involved in the renovation market.

CMHC. *Residential Renovation Overview - Summary Report*, 1988.

This summary report is based on the full evaluation report which documents the results of major renovation surveys conducted for CMHC. Evidence of market problems are examined in order to isolate areas where government action may be appropriate. Current and recent federal programs are examined in the context of the problems identified.

CMHC. *A Consultation Paper on Housing Quality*, 1988.

This working paper was written to focus discussion on the key issues related to the quality of housing in Canada. It presents a brief history of the federal role in improving housing quality, examines current federal activities and presents a discussion about the underlying conceptual dimensions of quality.

Dansereau, Francine, Louise Boulais et Marcel Gaudreau. *Relevé et analyse des expériences d'enquêtes les plus représentatives effectuées au Québec, touchant la qualité des logements*. Montréal, SHQ, October 1988.

This study was commissioned by SHQ (la Société d'habitation du Québec) and consists of the collection and analysis of data from research on the quality of housing in the province of Quebec. All investigations undertaken by SHQ, CMHC or StatsCan were expressly excluded from this study, which concentrates on research previously undertaken by INRS-Urbanisation, or by Quebec municipalities or non-government organisations. The analysis centers on the methodological aspects of the research and not on the results. It examines the types of instruments used and the methods of inquiry, and then attempts to determine the validity and reliability of the results and to decide whether the instruments adequately and efficiently meet the needs of the users. Examples of the various questionnaires used in previous research are included in the appendix. The conclusion gives suggestions on how to increase the quantity and improve the quality of the data available in the area of housing condition.

Dansereau, Francine, Louise Boulais et Marcel Gaudreau. *Méthodologie d'inventaire et d'évaluation de la qualité de l'habitat*, prepared for the Société d'habitation du Québec, 1989.

This report presents a methodology to conduct a housing inventory and evaluate the quality of housing. It includes occupant and landlord interview instruments and inspection instruments. This methodology was the basis of the methods used in a Montreal study conducted in 1990 (the results are not yet published).

Dennis, Michael and Fish, Susan. *Programs in Search of a Policy*, A. M. Hakkert, Toronto, 1972

This report includes a major section on housing condition that reviews the need for repair data quality and the Statistics Canada estimates of substandard dwellings produced from the 1951 and 1961 censuses. As well as the overall results, the relationships between need for repair estimates and variables such as dwelling age, dwelling location (urban/rural) and the value of the dwelling are presented. The authors express serious concerns with both the conceptualization and the operationalization of the need for repair measures and discuss a number of problems with the final estimates. They also discuss reports that have criticized similar data collected by the U.S. Census Bureau.

Douglas, Paul *et al*. *Building the American City: Report of the National Commission on Urban Problems to the Congress and to the President of the United States*, Washington D.C.: Government Printing Office, 1968.

This report presents a detailed review of housing needs based on the data available to the commission. The report criticizes the existing data for not being linked to good working definitions of "a decent home" and "a suitable living environment", the supposed anchor points of the national housing goals for the U.S. A number of specialized topics are discussed including housing and poverty, housing for different racial groups, family dislocations from demolitions and the role of the public sector.

Ekos Research Associates Inc. *Pilot Study of Physical House Condition and Rehabilitation Need*, for CMHC, 1981.

The basic purpose of the report is to document an innovative methodology developed to measure physical house condition, rehabilitation need and rehabilitation costs. The methods, which included condition assessments by inspectors, occupants and trained interviewers were tested in a pilot study of 500 houses in the inner city of Ottawa. The results of the study, the advantages and limitations of using the approach, and the implications for future research are discussed. A synopsis of the major findings and the research implications were presented in a summary report entitled "The Study of Physical House Condition and Rehabilitation Need — Highlights of the Ottawa Pilot: Approach, Findings, Implications" (1981).

Ekos Research Associates Inc. *Methodology for the Evaluation of the On-Reserve Housing Program*, for the Department of Indian and Northern Development, 1983.

This study documents the methodology developed for the Evaluation of the On-Reserve Housing Program. The methodology was based on the one developed for CMHC for the 1980 Pilot Study of Physical House Condition and included the collection of need for repair and other data from inspectors, occupants and trained interviewers. The methodology was expanded to include surveys of a number of pertinent study populations such as native leaders and community health representatives.

Ekos Research Associates Inc. *The Coming Crisis: Low-rise Housing in Metropolitan Ontario*, for the Ontario Ministry of Housing, 1984.

The report presents findings from a survey designed to provide up to date knowledge of the physical condition of the urban low-rise housing stock in Ontario, and the characteristics of both its occupants and owners. The study documented a disturbing trend towards the depletion of the low-rise rental stock in Ontario.

Ekos Research Associates Inc. *Study of Landlords and the Ontario Rent Review Process*, for the Ontario Ministry of Housing, 1985.

The study was commissioned to provide The Commission of Inquiry into Residential Tenancies with empirical evidence on the nature of the physical condition of low-rise rental buildings in Ontario, landlord attitudes towards rent regulation and their motivations and intentions to renovate. The methodology included linked inspections and landlord and tenant interviews for several hundred buildings.

Ekos Research Associates Inc. *Technical Report of the Study of On Reserve Housing Conditions*, for the Department of Indian Affairs and Northern Development and CMHC, 1986.

This report documents the results of a major nation-wide study of housing conditions on Indian reserves. It presents the substantive results of the study and summarizes the methodology used (which is explained in detail in companion documents). The methods, which were based on the results of the 1980 Ottawa Pilot Study and 1983-84 CMHC RRAP Evaluation, included occupant interviews and technical skim inspections for a sample of approximately 2,000 dwellings and technical inspections for a subsample of dwellings. It also included a series of reserve level surveys of band council members, community nurses, etc.. A summary report "Summary Report: On Reserve Housing Program Evaluation" was given a wide distribution by DIAND.

Ekos Research Associates Inc. *Technical Report on the National Landlord Pilot Study*, for CMHC, 1986.

This report documents the results of a test of three alternative methods of survey administration for a landlord interview: telephone, in person and self-administered mailout. The discussion includes detailed aspects of survey administration such as contact procedures, training, questionnaire "placement" and follow-up procedures. It also examines the potential data quality and cost implications of the results for the 1986 National Housing Survey. The optimal methods for conducting a landlord survey are shown to depend upon a number of factors such as survey timing,

instrument design and instrument length, although in person interviews were shown to be the least preferred by landlords because of the time involved.

Ekos Research Associates Inc. *Report on the Pre-Test of a Telephone Method to Solicit Participation in the CMHC National Occupant Survey*, for CMHC, 1986.

This report documents the results of a test of an alternative to the method initially proposed for the 1986 National Housing Survey. There was some concern that this original method, which involved trained interviewers conducting interviews and technical skim inspections based on a national cluster sample of low rise dwellings, would not provide a sufficient number of cases with the resources available. The alternative method involved sample generation through a random digit dialling (RDD) telephone procedure, with a comprehensive follow-up survey conducted by mail. This report presents the results of comparative test of the two methods (i.e., telephone/mail and in person interview) conducted within the same geographic area of Ottawa. Both methods were found to be viable; the telephone/mailout methods were estimated to be less costly to administer.

Ekos Research Associates Inc. *1986 National Housing Study*, for CMHC, 1987.

This study produced timely and accurate data on current housing conditions and the nature and extent of home renovation activity in 1985 for a sample of Canada's low-rise residential stock. A survey was conducted of a representative sample of homeowners, tenants and landlords. Technical inspections of selected houses were conducted by trained inspectors.

Ekos Research Associates Inc. *Improving upon Survey Measures of Physical House Condition*, for CMHC, 1987.

The report contains detailed analyses of repair need data collected from the CMHC National Housing Study. Validity and reliability of inspection data are also provided. The analysis included a multivariate model to improve upon the occupant estimates of repair need which included terms for occupant and dwelling characteristics, as well as the occupant condition ratings, to predict actual physical condition as measured by inspector ratings.

Ekos Research Associates Inc. *Household Survey Component of the 1987 Newfoundland and Labrador Housing Needs Assessment*, for the Newfoundland and Labrador Housing Corporation, 1988.

This report was only one part of the NLHC Needs Assessment, undertaken in 1987. It involved a mail survey of over 4,000 households in Newfoundland and Labrador. The questionnaire collected data on household characteristics, housing expenditures, characteristics of dwelling, physical condition of the dwelling, satisfaction with the dwelling, housing alternatives and the need for special facilities. The final sample included over 2,000 households. There were also 200 technical inspections of households which participated. This provided expert data to be linked with the occupant data.

Ekos Research Associates Inc. *An Examination of the Census and HFE Need for Repair Questions for the 1991 Census*, for CMHC, 1988.

The Research Division of CMHC commissioned this study to help to determine which of the two need for repair questions (Census or HFE) to recommend for

inclusion in the 1991 Census. It involves a detailed comparative analysis of the available sources of physical house condition data based on the need for repair questions. The report summarises the results of the analysis of the Census and HFE questions. In addition to comparing the validity and reliability of these two questions, the report provides broad recommendations about which version of the question is preferable for the next census.

Fried, Joseph P. *Housing Crisis U.S.A.*, New York: Praeger, 1971.

As part of a broader discussion of a crisis in U.S. housing, the author discusses the serious deficiencies with housing data in the 1960's and 1970's. Using terms such as "the statistical narcotic" and "ignorance and the crisis", Fried notes problems with the available data (e.g., they underestimate "dilapidated" housing) as well as the serious gaps required to assess overall quality such as community services, infrastructure and air quality. He also quotes senior U.S. housing officials who have expressed major concerns with housing condition and housing quality data.

Halfhide, E. *House Condition Surveys for the Residential Rehabilitation Assistance Program*. Professional Standards & Technology Sector, CMHC, 1978.

Under the new RRAP, a house condition survey was needed to serve as a model for municipalities, so that applications would provide more consistent and reliable information. This study makes recommendations as to the form of survey which would be appropriate for CMHC to issue to municipalities as a guideline. In order to develop an appropriate questionnaire, British, American and Canadian examples of house condition surveys are reviewed and discussed.

INSEE, *Les conditions de logement des menages en 1984*. Collection M133/1988, Paris, 1988.

This study gives the results from a 1984 national housing inquiry, one of a series of similar inquiries undertaken by INSEE in 1955, 1961, 1963, 1967, 1970, 1973, and 1978. Except in the 1955 and 1961 inquiries, which only included non-farming households, these studies examined a representative sample of all the housing units in France. A need for repair question has not been included in these inquiries. Instead, quality (or comfort) of housing stock has been measured by the existence and quantity of amenities such as WCs, bathrooms, and central heating.

Letartre, P.A., *Les instruments de mesure de la qualité physique des bâtiments résidentiels au Québec*, SHQ, 1983.

This study examines the role of the State in the restoration and renovation of housing units, in order to arrive at a recommendation of how active the government should be in these aspects of housing in Canada. As part of the analysis, the data obtained from the need for repair questions on the 1974 CMHC National Housing Survey and the 1981 Census of Canada are examined.

Maslove, Allan M. *Towards the Measurement of Housing Quality*. Discussion Paper No. 75. Ottawa: Economic Council of Canada, 1977.

This paper outlines a conceptual framework that can be employed in the development of indicators of housing quality and of the delineation and operation of a housing market. Possible research approaches are then described and evaluated. The four broad sets of housing quality attributes –structure, land, environment, and location–are discussed in some detail. This discussion includes

a review of research in each of these areas and notes on some of the possible indicator measures that have been suggested, and the selection of a "working set" of indicators. Also, the paper presents measures of some of the indicator variables, and constructs a summary indicator relating to the distribution of housing within a housing market. The final chapter reviews the study and concludes with a discussion of the most promising avenues for future research.

Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, Directoraat-Generaal van de Volkshuisvesting, 1988. *Estimate of Needs, 1988-1992: Multi-year housing construction plan/multi-year urban renewal plan: estimate of the trend in the quality of the housing stock.* Netherlands, 1988.

This report examines the quality of housing stock in the Netherlands in 1984, and predicts future trends in quality, with reference to the house improvement programmes in the 1988-1992 Multi-year Housing Construction Plans and Urban Renewal Plans. For this purpose, an inventory of the quality of the housing stock took place between 1983 and 1985 on a random basis: the "Kwalitatieve Woningregistratie" (KWR, Housing Quality Registration). The quality of the housing stock was defined in terms of how much it would cost to eliminate the defects encountered. In the case of the structural quality of the housing stock, obvious defects in the structural parts of the dwelling were taken into account; while for residential quality, the lack of amenities and the small size of the rooms were the factors considered. From the KWR findings, an estimate was then made of the quality of housing stock in the entire country.

Miron, John R. *Housing in Postwar Canada: Demographic Change, Household Formation, and Housing Demand.* Kingston and Montreal, McGill University Press, 1988.

In one section of this book, Mr. Miron discusses the definition of need for major repair and the problems which result from comparing the various census counts which measure this aspect of housing quality. He believes the principal problem in comparing census counts is that the approach employed has varied over time. Since the standards of housing quality are ill-defined and inconsistent over time, he is sceptical of any data resulting from the comparison of census counts on the repair need question.

NORDCO Ltd., *St. Johns Rental Housing: Pilot Test of the Municipal House Condition Survey Instrument*, Ottawa, CMHC, February 1988.

This study involved a first pilot of a new survey instrument for the evaluation of dwelling condition (Municipal House Condition Survey Package) for low-rise multiple unit structures. A sample of 19 buildings was inspected and tenants in 36 units in these buildings were interviewed about their dwelling condition. Because of recent renovations, most buildings and units were in fairly good condition. The instrument proved useful in assessing dwelling condition. The major difficulty encountered in the inspections was that the presence of finished basements impeded the evaluation of the condition of the basement envelope. Tenant responses to the repair need question were inconsistent for the same building and did not reflect structural defects revealed by the inspections.

O'Dell, Alan. *Towards a Model of the Housing Stock and its Physical Condition.* Building Research Establishment, Garston, U.K., 1983.

This study consists of the development of a simple model representing the growth of the housing stock since the middle of the last century. It has been tested and shown to reproduce reasonably well the observed age and condition characteristics of the stock in 1981 and to be robust against uncertainties in the historic data. An example of its use for policy evaluation is given. For the purposes of this study, physical condition was taken to be the estimated expenditure required to put a dwelling in good order (referred to as "repair cost").

Office of Population, Census and Surveys, Social Survey Division. *General Household Survey 1978: An interdepartmental survey sponsored by the Central Statistical Office.* London: Her Majesty's Stationery Office. 1980.

The General Household Survey (GHS), which has been running since 1971, is a continuous survey based on a sample of the general population resident in private (i.e., non-institutional) households in Great Britain. It covers five main subjects areas of which housing is one. In 1978, for the first time, respondents were asked how satisfied they were with various aspects of their housing situation. All those who were not "very satisfied" were then asked why they were not completely satisfied. The reasons for dissatisfaction fall into six

Ontario Ministry of Housing. *1985 Housing Market Survey*, 1985.

The survey report documents the current Ontario housing market situation. It is compiled from a large sample of all private households for ten specific urban areas and for the entire province. It is designed to be a resource for policy and program analysis.

Pelli, Catherine. *Measuring Housing Conditions (Special Study Number 8)*, prepared for the OECD Working Party on Social Indicators, 1985.

The report by the Chairman of the OECD Working Committee on Social Indicators, is based upon the results of group of experts on the quality of housing who reported to the Committee. The discussion attempts to find common ground among the various participants in order to develop consistent approaches, definitions, measures, etc. for assessing housing quality. Five general categories of housing quality are presented: indoor space, outdoor space, economic accessibility, security of tenure and physical accessibility (i.e., access to services and jobs from the dwelling). Various indicators for each of these categories are examined. In some instances, evidence about the correlation — or lack of it — between objective data and occupant perceptions is presented.

*Statistics Canada. *Census*, 1941.

The Census contains data in a very rudimentary form on the need for repairs on Canada's housing stock. The information was collected by enumerators, is only relevant to the exterior condition of the houses, and considers the need for major repair only. However, the Census is the only indicator of housing stock condition for this period.

*Statistics Canada. *Census*, 1951.

This Census contains a slightly revised version of the 1941 Census need for repair question. Again, the data was collected by enumerators, and was concerned only with major repairs and the exterior of the house.

*Statistics Canada. *Census*, 1961.

Unanticipated was the finding that there is data here for the tertiary repair need question. Although breakdowns for tenure etc. are done by the need for major repair, there is overall data relating to the need for minor repairs, major repairs and houses in good condition (assumedly those only requiring regular maintenance). To the best of our knowledge this is the first source of data where the repair need question was expanded beyond identifying just the need for major repair.

*Statistics Canada. *Census*, 1971.

This census apparently has no information on the need for repair to Canada's housing stock. There is, however, plenty of information for the age of housing stock and tenure.

*Statistics Canada. *Census*, 1981.

The data on the need for repairs is fairly extensive, relating to factors such as tenure, household type, etc.. The repair need question of this census addresses; no repair need (only regular maintenance), minor repair need, and major repair need, specifically in that order.

*Statistics Canada. *Household Facilities and Equipment Survey*, 1982, 1985, 1987, 1988, 1989.

These publications present statistics derived from the series of annual sample surveys on household facilities and equipment, which are carried out in conjunction with the Labour Force Survey. Over 30,000 households are included in the sample to represent virtually all private households in Canada. These surveys use a three-item need for repair question.

TEEGA Research Consultants Inc., *A Review of Research on Residential Renovation*, Ottawa, CMHC, January 1989.

This report describes the approach and presents the results of a review of research on residential renovation in Canada. The time span of the research work reviewed is the past ten years. One of the six broad categories of research examined is housing conditions and needs.

Trudel, Jacques, *New Approaches to the Evaluation of Quality of Housing: Study Report and Discussion Paper*. Montréal, SHQ, Direction de l'analyse et de la recherche, November 1989.

This report discusses the efforts and analyses of the SHQ to develop methods for a new survey of housing conditions and quality in Québec. The approach favoured is one based on objective dwelling characteristics and indicators of the performance of housing components (e.g., breakdowns as reported by occupants). To a certain extent the approach is modelled after one originally developed by the American Public Health Association: the Housing Appraisal Method.

Turner, Margery Austin, and Struyk, Raymond. *The Housing Quality Simulation Model: Basic Description*. Washington, D.C., Agency for International Development, Office for Housing and Urban Programs, 1985.

This paper describes a small-scale computer simulation model developed to analyze the impact of government interventions in the housing sector on the quality of housing occupied by households in different economic, tenure, and initial housing quality circumstances. Annex A discusses the derivation of some of the data used in the Housing Quality Model for Sri Lanka. The data used in these analyses were obtained from the third and fourth rounds of the Labour Force and Socio-Economic Survey of 1980-81, conducted by the Department of Census and Statistics, in which households were defined according to infrastructure (pass, fail) and structure type (permanent, semi-permanent, improvised).

United Nations Economic Commission for Europe, Economic and Social Council. *Methodologies for Evaluating the Quality and Use-Value of Dwellings*, prepared for the Committee on Housing, Building and Planning, 1986

This working paper was prepared for distribution to delegations attending the Working Party on Housing in Geneva on March 6 - 7, 1986. It attempts to provide a framework for the different countries working towards the development of standard definitions and measures to evaluate housing quality. This framework includes five broad categories for evaluation methods: aims, sponsors, aspects evaluated, measurement methods and evaluation time. The work of several European countries are presented within this framework.

United States Department of Commerce/Housing and Urban Development. *American Housing Survey for the United States*, 1985.

The assessment of housing condition is shown in two different ways; first, by the "overall opinion of structure" (rating from 1 to 10), and secondly, by "Housing unit characteristics - Physical problems - severe/moderate". Many crosstabulations are presented in a fashion similar to the Stats Can Census books.

*University of Manitoba Research Ltd.. *Need for Repair: An Evaluation of Alternative Question Phrasing*, 1988.

This study presents the results of a telephone survey in Manitoba to determine the effects of differences in the wording and in the reliability of two simple questions of need for repair (i.e., the Census and HFE questions). In addition to using identical methods for survey administration the sample design used a quasi-experimental design to control for variations in respondent characteristics. investigates the method for collecting information on the need for repair. The conclusion of the study was that any observed discrepancies in reported need for repair were not the result of differences in the wording of the two questions.

APPENDIX B

Housing Agencies Consulted

Housing Agencies Consulted

- Association Provinciale des Constructeurs d'Habitation du Québec
- Canada Mortgage and Housing Corporation
- Canadian Housing and Renewal Association
- Canadian Manufactured Housing Institute
- Canadian Real Estate Association
- Co-operative Housing Federation of Canada
- Institute For Research in Construction — National Research Council of Canada
- Institute of Urban Studies — University of Winnipeg
- Manitoba Housing Corporation
- Newfoundland and Labrador Housing Corporation
- New Brunswick Housing Corporation
- Ontario Ministry of Housing
- Prince Edward Island Housing Corporation
- Société d'Habitation du Québec

APPENDIX C

Survey Instruments

C.1 Physical Inspection
C.2 Homeowner
C.3 Renter
C.4 Landlord

PHYSICAL INSPECTION INSTRUMENT

BUILDING CHARACTERISTICS

1. **Is this building a:** (circle one response only.)

Single house — a single house not attached to any other building	01
Semi-detached or double house — one of two houses attached side-by-side but not attached to any other building	02
Duplex — one of two houses, one above the other, not attached to any other building	03
Row house — one of three or more houses joined side-by-side	04
Apartment in a building that has less than five storeys (e.g. low-rise apartment, multi-plex)	05
Apartment in a building that has five or more storeys	06

2. **How many storeys are there above grade (foundation)? Include ground floor.**

NUMBER OF STOREYS |__|__|

3. **How many individual dwelling units are in this building?**

NUMBER OF INDIVIDUAL UNITS |__|__|__|

4. **Approximately how much interior floor space in total is there in this dwelling? Exclude the basement and garage.**

|__|__|__|__| *square feet*

OR |__|__|__|__| *square metres*

5. **In your estimation, approximately when was this dwelling originally built?**

|1|__|__|__|

6. **What is the overall type of construction used for this building?**

Woodframe: Balloon frame	1
Platform frame	2
Post and beam	3
Plank frame or other	4
Solid masonry	5
Unit masonry	6
Concrete flat plate	7
Other (please specify) ______________	8

BUILDING EXTERIOR

7. Provide a general rating of the *structure* of the *exterior foundation walls* or posts based on evidence of cracks, crumbling, holes, etc..

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

8. *Exterior wall cladding materials are:* Code primary (most frequent) and secondary (next most frequent).

	a) Primary	b) Secondary
Brick	01	01
Stone or concrete	02	02
Stucco	03	03
Wood	04	04
Steel or aluminum siding	05	05
Vinyl siding	06	06
Composition sheet material	07	07
Composition material (imitation brick, etc.)	08	08
Other (please specify) ______________	09	09
No secondary material		10

9.a) **Rate the condition of the *surface* (cladding) of the *exterior walls* (e.g., in terms of wear, paint condition, cracks, rotting wood, crumbling material, holes, etc.).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ____ ______.00

b) **Rate the *structural* soundness of the *exterior walls* on the basis of large cracks, settling, loose bricks, leaning, buckling, etc.).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ____ ______.00

10. ***Roof shape* and *material* are:** (For combination shapes, check all that are applicable.)

Flat roof	1
Pitched roof, asphalt shingles	2
Pitched roof, wood shingles	3
*Pitched roof, other type of shingles (please specify)*____________________	4
Pitched roof, metal	5
Other (please specify) ____________________	6

11.a) **Provide a general rating of the *roof's surface* condition on the basis of a visual examination of the sheathing and covering material (e.g., in terms of loose or missing material, damaged shingles).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

b) **Rate the *roof structure* (excluding soffits and fascia) from an examination of the roof line (ridge) and shape (e.g., in terms of sagging/buckling/rot).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

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12. **Provide a general rating of the *condition* of all *exterior porches, balconies* and *other attached structures* (e.g., in terms of evidence of hazards, unsoundness, deterioration, missing stairs, handrails, etc.).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ __ ___ .00

13. **On the basis of an examination of lot grading and other evidence such as standing water, provide a rating of *surface drainage*.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ __ ___ .00

14. **Provide a general rating of the condition of the building property in terms of upkeep (e.g., consider presence of hazardous and safety-related features only.)**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ __ __ __ __ __ .00

15. **Based on the exterior visual inspection of the frame, sash, sills and glass, provide an *overall rating* of the condition of all *doors and windows*** (consider evidence of broken glass, peeling paint, bare and rotting wood, cracks, etc., and their weatherproofness, presence of weatherstripping, storm doors, tightness of fit).

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ __ __ __ __ __ .00

16. **Are there any *exterior doorways* which are warped, lack weatherstripping or are not tight-fitting such that there could be a draft or excessive heat loss?**

	Yes	No	NA	DK/NR
Lack weatherstripping	1	2	8	9
Doors not tight-fitting	1	2	8	9
Warped doors	1	2	8	9

17. **Are there any *windows* which are warped, lack weatherstripping, are not tight-fitting or lack a double glazing such that there could be a draft or excessive heat loss?**

	Yes	No	NA	DK/NR
Lack weatherstripping	1	2	8	9
Doors not tight-fitting	1	2	8	9
Warped windows	1	2	8	9
Lack a double glazing	1	2	8	9

18. **Taking into account all aspects of the *building exterior*, how would you rate the *overall condition* of the dwelling's exterior?** (Review this rating after the interior inspection is completed.)

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

BASEMENT/BELOW GRADE

19. **Does this dwelling have:**

Basement	1
Cellar space	2
Crawl space	3
Slab-on-grade	4
Other (please specify) ____________________	5

20. Rate the *condition* of the *basement floor* (excluding weatherproofness) on the basis of evidence of cracks, buckling, deteriorated material, etc.. (If not a true basement, circle not applicable.)

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

21. Rate the *structural* condition of the *foundation walls* on the basis of an inspection from the inside considering evidence of cracks, crumbling, etc..

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

22. **Rate the *weatherproofness* of the *basement*/cellar space/crawl space, etc., on the basis of evidence of moisture penetration and dampness (e.g., water marks, mildew, standing water).**

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

23. **If possible, rate the insulation package for below grade, walls and roof. Consider both quantity and quality in making your ratings.** Do not use any potentially destructive methods of probing.

	BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
a) *Insulation below grade*	1	2	3	4	5	6	7	8	9
b) *Insulation in walls*	1	2	3	4	5	6	7	8	9
c) *Insulation in roof*	1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

MECHANICAL SYSTEMS

Heating System

24. **What is the principal fuel used for heating this building?** (Circle the appropriate number. If a second fuel is used at least one third of the time, circle one number in the second column.)

	Principal Fuel	**Secondary Fuel**
Oil or kerosene	1	1
Piped gas (e.g. natural gas)	2	2
Bottled gas (e.g. propane)	3	3
Electricity	4	4
Coal or coke	5	5
Wood	6	6
Other (please specify) ________________	7	7

25. **What is the principal type of heating epuipment for this building?** (Circle the appropriate number. If at least one third of the heating is provided by a second type of equipment, circle one number in the second column.)

	Principal Heating Equipment	**Secondary Heating Equipment**
Forced hot air furnace	1	1
Steam or hot water boiler	2	2
Space heater (e.g., oil or electric)	3	3
Electric baseboard heating	4	4
Cooking stove, range, or heating stove	5	5
Woodstove	6	6
Other (please specify) ________________	7	7

IF THE BUILDING HAS NO FURNACE, PLEASE SKIP TO Q.27

26. **On the basis of a technical inspection, rate the *overall condition of the furnace* in terms of operability** (consider the fire pot, safety, leaks in damper, flue seals, etc., and burner capacity).

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__| .00

27. **Rate the *overall condition* of the *heat distribution system* (including duct work, pipes, convectors, space heaters, radiators, registers, electrical baseboards, etc.).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__| .00

Electrical System

28. **What is the house supply amperage?**

Amperage |__|__|__|

29. **Rate the condition of the (visible) *wiring*.** Consider evidence of worn, damaged, frayed, broken, or inoperative wiring in making your assessment.

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION		PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

30. **Rate the *overall condition* of the *electrical system*.** Consider fire and safety factors as well as performance in making your assessment.

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION		PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

Plumbing System

31. **On the basis of an inspection of the pipes visible in the basement, rate the *overall condition* of the *water pipes* and *water supply system* (including waste and stack). Consider evidence of corrosion, leaks, deterioration, etc., in making your rating.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

[ ]

COST ESTIMATE

$ |_|_| |_|_|_| .00

32. **On the basis of an inspection of the pipes visible in the floors above grade, (or the dwellings unit, if a multiple unit structure) rate the *overall condition* of the *plumbing*.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

[ ]

COST ESTIMATE

$ |_|_| |_|_|_| .00

Ventilation System

33. **Is there either a window which opens or a functioning ventilator in:**

	YES	NO	N/A	DK/NR
a. *The bathroom(s)*	1	2	8	9
b. *The kitchen*	1	2	8	9

34. **Is there an apparent lack of air exchange (e.g., as indicated by a musty smell, etc.) in:**

	YES	NO	N/A	DK/NR
a. *The basement*	1	2	8	9
b. *The floors above grade*	1	2	8	9

35. **Taking into account all aspects of the electrical, heating/cooling, plumbing and ventilation systems, please rate the overall condition of the mechanical systems.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

IF THE DWELLING IS A SINGLE UNIT DWELLING, PLEASE SKIP TO Q.38.

COMMON AREAS

36. **Which of the following apply to the common areas of this property? If not applicable, circle 8.**

	YES	NO	NA	DK/NR
Outside fire escape to ground floor	1	2	8	9
Two separate stairways to ground floor leading to outside doors	1	2	8	9
Broken or missing interior steps or railings	1	2	8	9
Missing light bulbs	1	2	8	9
Fire doors in hallways	1	2	8	9
Smoke detectors in hallways	1	2	8	9
Fire extinguishers in hallways	1	2	8	9
Fire alarms in hallways	1	2	8	9

37. **Rate the condition of the following common areas.**

		BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
a.	*Entranceways*	1	2	3	4	5	6	7	8	9
b.	*Hallways*	1	2	3	4	5	6	7	8	9
c.	*Indoor recreation areas/rooms*	1	2	3	4	5	6	7	8	9
d.	*Parking garages*	1	2	3	4	5	6	7	8	9
e.	*Storage areas*	1	2	3	4	5	6	7	8	9
f.	*Overall cleanliness*	1	2	3	4	5	6	7	8	9

GROUND FLOOR AND UPPER FLOORS/UNITS

Bathroom

38. **How many bathrooms are there within the dwelling unit?** (A complete bathroom is a room with a flush toilet, bathtub or shower, and a washbasin with piped water. A half bathroom is a room with a flush toilet or a bathtub or shower, but does not have all the facilities for a complete bathroom.)

NUMBER OF COMPLETE BATHROOMS |__|__|

NUMBER OF HALF BATHROOMS |__|__|

39. **Provide an *overall rating* of the *bathroom equipment* (e.g., toilet, sink, shower/bath) on the basis of its condition.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION		PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ |__|__| |__|__|__|.00

Kitchen

40. **Are there complete kitchen facilities within this building; that is, a kitchen sink with piped water, adequate shelving or cupboards and counter space, and a refrigerator and range or stove?**

YES- complete facilities	1
NO- partial facilities	2
NO facilities	3
DK/NR	9

41. **Is the condition of the kitchen counter tops and other surfaces good enough to allow proper cleaning and, therefore, the hygienic preparation of food?**

YES	1
NO	2
DK/NR	9

Interior Floors, Stairs, Walls and Ceilings

42. **On the basis of a visual inspection of the *surface* condition of the *floors* for this dwelling unit, provide a summary rating of the floor coverings above the basement.**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

43. **On the basis of a visual inspection rate the *structural* soundness of the *floors above the basement* for this dwelling unit.** Consider evidence such as movement, buckling, sloping, sagging, loose jointing, etc., in making your decision.

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

44. **On the basis of a technical inspection of all the *interior stairs* for this dwelling unit, provide a general rating.** Consider factors such as *structural* and *surface* conditions as they relate to safety, the condition of the treads, risers and balustrades, and whether or not stairs meet current code requirements in making your assessment.

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

[ ]

COST ESTIMATE

$ ☐☐ ☐☐☐.00

45. **On the basis of visual inspection of the *interior wall and ceiling surfaces* of this dwelling provide a summary condition rating. Consider factors such as peeling paint/wallpaper, fallen plaster, sagging, holes, small cracks, bulging, leaning, etc., in making your assessment.**

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

[ ]

COST ESTIMATE

$ ☐☐ ☐☐☐.00

46. **How many places in the dwelling unit reveal evidence of significant *water entry*? Consider evidence of moisture penetration such as water marks, dampness, mildew, etc..**

None 1
One place 2
Two or more places 3

47. **Is there any evidence of condensation occurring in the house? If yes, how serious is it? Consider stains, water marks, deterioration under sill, mildew, etc..**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐ .00

48. **On the basis of your inspection of interior *walls, ceilings, floors* and *stairs* of this dwelling unit, how would you rate the *overall condition* of the interior of the house. (Consider both surface and structure).**

BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐ .00

Fire Hazards

49. **Rate the *seriousness* of *fire hazards* evident from the interior on the basis of the following construction items.**

	NO DANGER						VERY SERIOUS DANGER	NA	
a. *Means of access and egress (door locations)*	1	2	3	4	5	6	7	8	9
b. *Common garbage chutes*	1	2	3	4	5	6	7	8	9
c. *Fuel storage tanks (e.g., poorly secured or deteriorated tanks)*	1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST
CALCULATIONS

COST ESTIMATE

$ |_|_| |_|_|_| .00

50. **Rate the *seriousness* of *fire hazards* evident from the interior on the basis of homeowner or management practices (e.g., improperly stored combustible materials).**

NO DANGER						VERY SERIOUS DANGER	NA	DK/ NR
1	2	3	4	5	6	7	8	9

51. **Is there a smoke or fire detector in the dwelling? (Test to check working condition.)**

Yes	1
Yes, but it is not working	2
No	3 --> SKIP TO Q.53

52. **Is the location of the smoke or fire detector acceptable?**

Yes	1
No	2
DK/NR	9

RATINGS FOR ENTIRE BUILDING

53. **How would you rate the *overall condition* of this building on the basis of your inspection of the exterior and interior, considering both structural and surface conditions?**

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

LABOUR, MATERIAL COST CALCULATIONS

COST ESTIMATE

$ ☐☐ ☐☐☐.00

54. **On the basis of evidence drawn from your inspection of the building, how would you rate the *general quality of maintenance practices*?**

BEYOND REPAIR/REPLACE		MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW		NA	DK/ NR
1	2	3	4	5	6	7	8	9

55. **Is this dwelling in need of any repairs? Do not include desirable remodelling or additions.**

NO, ONLY REGULAR MAINTENANCE is needed (painting, furnace cleaning, etc.)	1
YES, MINOR REPAIRS are needed (missing or loose floor tiles, bricks or shingles, defective steps, railing or siding, etc.)	2
YES, MAJOR REPAIRS are needed (defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc.)	3

DRAFT SURVEY QUESTIONNAIRE
SURVEY OF HOMEOWNERS

I. DWELLING AND HOUSEHOLD CHARACTERISTICS

1. **Which of the following *best* describes your home?**

Since house — a single house not attached to any other building	1
Semi-detached, duplex house or row house	2
Low-rise apartment — a building that has less than five storeys	3
High-rise apartment — a building that has five or more storeys	4
Other (please specify) ______________________	5
Don't know	9

2.a) **How many storeys are there (above grade) in your building/residence?**

NUMBER OF STOREYS |_|_|

b) **How many units or dwellings are there in your building/residence?**

NUMBER OF UNITS/ DWELLINGS |_|_|

3.a) **How many rooms are there in your dwelling? (Include kitchen, living/dining rooms, bedrooms and any finished attic or basement rooms. Do not include bathrooms, halls, vestibules, unfinished rooms and rooms used solely for business purposes.)**

NUMBER OF ROOMS |_|_|

3.b) **How many bedrooms are there in your dwelling (i.e., those rooms used regularly for sleeping)?**

NUMBER OF BEDROOMS |__|__|

4. **To the best of your knowledge, approximately when was this dwelling originally built?**

|1|__|__|__|

5. **How long have you been living in this home?**

YEARS |__|__| *MONTHS* |__|__|

II. PERFORMANCE OF BUILDING/DWELLING SYSTEMS

Plumbing and Bathroom Facilities

6.a) **How many complete bathrooms does your dwelling have? (A complete bathroom is a room with a flush toilet, bathtub or shower, and a washbasin with piped water.)**

NUMBER OF COMPLETE BATHROOMS

b) **How many half bathrooms does your dwelling have? (A half bathroom is a room with a flush toilet and a washbasin with piped water *or* a room with a bathtub or shower.)**

NUMBER OF HALF BATHROOMS

7. **Does each bathroom have a window that opens or a functioning fan?**

Yes	1
No	2

8. **What kind of sewage disposal facilities do you have?**

Piped liquid waste disposal	1
Septic tank	2
Privy pit	3
Trucked disposal	4
Other (please specify) ____________________	5
Don't know	9

9.a) **Where do you get your water from?** (Circle all that apply.)

Piped water system	1
Well	2
Other	3
Don't know	9

b) **Do you ever have problems with your supply of running water?**

Yes, no water	1
Yes, inadequate water supply	2
No	3 --> **SKIP TO QUESTION 10**
Don't know	9

9.c) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

10.a) **Do your plumbing facilities (e.g., toilet, sinks, drains) ever break down or not work properly?**

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	-- > SKIP TO QUESTION 11
Don't know	9	

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Electrical System

11.a) **Does your electrical system (wiring, outlets) ever break down or not work properly?**

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	-- > SKIP TO QUESTION 12
Don't know	9	

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Heating System

12. **What is the principal fuel used for heating this dwelling?** (Circle the appropriate number. If you use a second fuel at least one third of the time, circle one number in the second column.)

	Principal Fuel	Secondary Fuel
Oil or kerosene	1	1
Piped gas (e.g., natural gas)	2	2
Bottled gas (e.g., propane)	3	3
Electricity	4	4
Coal or coke	5	5
Wood	6	6
Other (please specify) ____________________	7	7

13. **What is the principal type of heating equipment for this dwelling?** (Circle the appropriate number. If at least one third of the heating is provided by a second type of equipment, circle one number in the second column.)

	Principal Heating Equipment	Secondary Heating Equipment
Forced hot air furnace	1	1
Steam or hot water boiler	2	2
Space heater (e.g., oil or electric)	3	3
Electric baseboard heating	4	4
Cooking stove, range, or heating stove	5	5
Woodstove	6	6
Other (please specify) ____________________	7	7

14.a) **Does your heating system ever break down or not work properly?** (Do not include interruptions resulting from electrical failures.)

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	--> SKIP TO QUESTION 15
Don't know	9	

14.b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Elevators

15. **Does this building have an elevator?**

Yes	1
No	2

16.a) **Does your elevator break down or not work properly?**

Yes, breaks down	1
Yes, does not work properly	2
No	3 --> SKIP TO QUESTION 17
Don't know	9

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

17. **To the best of your knowledge, are any of the following health and safety *hazards* present in this dwelling?**

	Yes	No	Don't Know
Fire hazards	1	2	9
Toxic materials	1	2	9
Pests	1	2	9

Satisfaction with Facilities and Equipment

18. **Are you satisfied or dissatisfied with the extent to which the following facilities and equipment meet your household needs?** Please rate on the 7-point scale where 1 is extremely dissatisfied, 7 is extremely satisfied, and the midpoint 4 is neither satisfied nor dissatisfied.

		EXTREMELY DISSATISFIED			NEITHER			EXTREMELY SATISFIED
a.	*Kitchen appliances*	1	2	3	4	5	6	7
b.	*Water quality*	1	2	3	4	5	6	7
c.	*Baths and showers*	1	2	3	4	5	6	7
d.	*Water supply and sewage disposal system*	1	2	3	4	5	6	7
e.	*Heating*	1	2	3	4	5	6	7
f.	*Lighting*	1	2	3	4	5	6	7
g.	*Electrical system*	1	2	3	4	5	6	7
h.	*Air quality*	1	2	3	4	5	6	7

III. ADEQUACY OF DWELLING

19. **How satisfied are you with the following aspects of the interior of your dwelling?**

		EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
a.	*Interior design/layout of rooms*	1	2	3	4	5	6	7
b.	*Exposure to sunlight*	1	2	3	4	5	6	7
c.	*For residents of multiple unit dwellings only: Noise from inside the building (e.g., other units, common areas)*	1	2	3	4	5	6	7
d.	*Noise from outside (e.g., street, traffic)*	1	2	3	4	5	6	7
e.	*Crowding*	1	2	3	4	5	6	7
f.	*Amount of space*	1	2	3	4	5	6	7
g.	*Closets and storage areas* . . .	1	2	3	4	5	6	7
h.	*Safety and security of the building/property*	1	2	3	4	5	6	7

Neighbourhood

20. **How satisfied are you with the following aspects of your neighbourhood?**

		EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
a.	*Parks and green space*	1	2	3	4	5	6	7
b.	*Physical condition of the surrounding properties and dwellings*	1	2	3	4	5	6	7
c.	*Amount of traffic*	1	2	3	4	5	6	7
d.	*Street lighting*	1	2	3	4	5	6	7
e.	*Physical condition of roads and sidewalks*	1	2	3	4	5	6	7
f.	*Police and fire protection*	1	2	3	4	5	6	7
g.	*Recreation facilities*	1	2	3	4	5	6	7

20. Continued.

		EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
h.	*Water and sewage services*	1	2	3	4	5	6	7
i.	*Your neighbourhood as a whole*	1	2	3	4	5	6	7

21. **Considering the amount of crime in your community, how safe do you feel living in your present dwelling?**

COMPLETELY UNSAFE			NEITHER SAFE NOR UNSAFE			COMPLETELY SAFE
1	2	3	4	5	6	7

IV. PHYSICAL CONDITION AND NEED FOR REPAIR

22. **Do you have any problems with cold air drafts from loose, missing or poorly sealed windows?**

Yes 1
No 2

23. **Do you have any problems with cold air drafts from poorly fitting or missing doors?**

Yes 1
No 2

24. **Do you have any leaks or water penetration through the walls or roof of your dwelling?**

Yes 1
No 2

25. **Do you have any problems with water penetration or flooding in your basement?**

Yes 1
No 2

26. **Considering all aspects of your dwelling, what is the physical condition and repair need of each of the following?** Please rate each component on a 7-point scale where 1 is *beyond repair/replace*, 7 is *perfect condition/like new* and the midpoint 4 is the *minimum acceptable condition.*

		BEYOND REPAIR/ REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	Not Applicable	Don't Know
a.	*The **outside** of your home?*	1	2	3	4	5	6	7	8	9
b.	*The **inside** of your home?*	1	2	3	4	5	6	7	8	9
c.	*The mechanical systems (e.g., electrical, heating/cooling, plumbing systems)* . . .	1	2	3	4	5	6	7	8	9
d.	*For residents of multiple unit dwellings only: The common areas (e.g., hallways, recreational areas)* . . .	1	2	3	4	5	6	7	8	9
e.	*The **overall condition** of your dwelling*	1	2	3	4	5	6	7	8	9

27.a) **Is this dwelling in need of any repairs?**

NO, REGULAR MAINTENANCE is needed (painting, furnace, cleaning, etc.) . . . . 1 --> **SKIP TO QUESTION 28**

YES, MINOR REPAIRS are needed (missing or loose floor titles, bricks or shingles defective steps, railing or siding, etc. 2

YES, MAJOR REPAIRS are needed (defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc. 3

b) **Have the problems existed for more than one year?**

Yes 1
No 2

V. SHELTER COSTS AND FINANCES

28. **What price did you pay for this dwelling?**

Pruchase Price $ |_|_|,|_|_|_|,|_|_|_|.00

29. **Is there a mortgage outstanding on this dwelling?**

Yes 1
No . . . . 2 --> SKIP TO QUESTION 33

30. **What is the approximate amount of the principal outstanding on the mortgage(s)?**

Mortgage Principal $ |_|_|_|,|_|_|_|.00

31. **What is your regular mortgage payment, excluding property taxes?**

Mortgage Payment $ |_|_|_|,|_|_|_|.00

32. **How often is this payment made?**

Once a week 1
Twice a month 2
Once a month 3

Other (please specify) ______________________ 4

33. **What were your approximate total annual payments in 1990 for the following items?**

Mortgage Payments (both principal and interest) |_| |_|_|_|

Property Taxes (include municipal, school, and any special real estate taxes) |_| |_|_|_|

Hydro |_| |_|_|_|

Water |_| |_|_|_|

Heating Fuel |_| |_|_|_|

Parking |_| |_|_|_|

34. **What is the estimated current market value of this dwelling?**

$ |_|_|_|,|_|_|_|,|_|_|_|.00

35. **Considering all sources, what was your approximate *total household income* in 1990**

$ |_|_|_|,|_|_|_|.00

36. **If you do not know your total household income for 1990, please tell us your total household income for the last month?**

$ |_|_|,|_|_|_|.00

37. **What are the main sources of income for your household?**

	Primary	Secondary
Employment/self-employment	1	1
Welfare/social assistance	2	2
Old age pension	3	3
Disability or workers' compensation	4	4
Unemployment insurance	5	5
Other(s) (please specify) ______________	6	6
Don't know	9	9

38. **Considering your current income, do you find it easy or difficult to meet your shelter related costs?**

EXTREMELY DIFFICULT			SOMEWHAT DIFFICULT			NOT AT ALL DIFFICULT
1	2	3	4	5	6	7

VI. CHARACTERISTICS OF THE HOUSEHOLD

39. **Which of the following types best describes your household?** (Circle one number only.)

One person, living alone	1
One adult with children	2
A married or common-law couple, without children	3
A married or common-law couple, with children	4
Two or more unrelated persons	5
Other (please specify) ________________	6

40. **Does any member of this household have any health problem or physical disability that requires the use of special physical structures or facilities in or around this dwelling (e.g., accessibility to dwelling and major rooms by wheelchair, grab bars, kitchen modifications, electronic intercoms, etc.)?** (Please circle the appropriate number.)

No	1
Yes, and changes to this dwelling would be desirable	2
Yes, but the dwelling is well designed and incorporates satisfactory features	3
Yes, but the dwelling has already been modified and is now satisfactory	4

41. **What type of disabilities do members of your household have that have required changes to your dwelling or will require changes?** (Circle all that apply.)

Visual	1
Hearing	2
Cognition	3
Mobility	4
Allergy-related	5
Other	6

42. **Which of these occupational groups comes closest to describing your current occupation (or former, if retired) and that of your spouse?**

	You	Your Spouse
No spouse		0
Farming, fishing, forestry, logging, mining and quarrying occupations	01	01
Labourer	02	02
Semi-skilled	03	03
Skilled tradesman	04	04
Sales, service, clerical	05	05
Professional	06	06
Managerial or administrative	07	07
Homemaker	08	08
Other (please specify) ______	09	09

43. **Which of the following categories best describes the employment status of you and your spouse in 1990?**

	You	Your Spouse
No spouse		0
Self employed	1	1
Full-time employee	2	2
Part-time employee	3	3
Unemployed	4	4
Full-time student	5	5
Retired	6	6
Other (please specify) ______	7	7

44. **Please identify the age, gender, and relationship to you of each person who lives in this dwelling.** (Please include yourself, your spouse, other family members, roommates, boarders and anyone else who usually lives here.) (Continue on back if necessary.)

			Relationship to You			
Person	**Age**	**Gender**	**Spouse**	**Child**	**Parent**	**Other**
1) *Yourself*		M F	-	-	-	-
2) *Person 2*		M F	1	2	3	4
3) *Person 3*		M F	1	2	3	4
4) *Person 4*		M F	1	2	3	4
5) *Person 5*		M F	1	2	3	4
6) *Person 6*		M F	1	2	3	4
7) *Person 7*		M F	1	2	3	4
8) *Person 8*		M F	1	2	3	4

SURVEY QUESTIONNAIRE
SURVEY OF RENTERS

I. DWELLING AND HOUSEHOLD CHARACTERISTICS

1. **Which of the following *best* describes your home?**

Since house — a single house not attached to any other building	1
Semi-detached, duplex house or row house	2
Low-rise apartment — a building that has less than five storeys	3
High-rise apartment — a building that has five or more storeys	4
Other (please specify) ________________	5
Don't know	9

2.a) **How many storeys are there (above grade) in your building/residence?**

NUMBER OF STOREYS |__|__|

b) **How many units or dwellings are there in your building/residence?**

NUMBER OF UNITS/ DWELLINGS |__|__|

3.a) **How many rooms are there in your dwelling? (Include kitchen, living/dining rooms, bedrooms and any finished attic or basement rooms. Do not include bathrooms, halls, vestibules, unfinished rooms and rooms used solely for business purposes.)**

NUMBER OF ROOMS |__|__|

3.b) **How many bedrooms are there in your dwelling (i.e., those rooms used regularly for sleeping)?**

NUMBER OF BEDROOMS |__|__|

4. **To the best of your knowledge, approximately when was this dwelling originally built?**

|1|__|__|__|

5. **How long have you been living in this home?**

YEARS |__|__| *MONTHS* |__|__|

II. PERFORMANCE OF BUILDING/DWELLING SYSTEMS

Plumbing and Bathroom Facilities

6.a) **How many complete bathrooms does your dwelling have? (A complete bathroom is a room with a flush toilet, bathtub or shower, and a washbasin with piped water.)**

NUMBER OF COMPLETE BATHROOMS |_|_|

b) **How many half bathrooms does your dwelling have? (A half bathroom is a room with a flush toilet and a washbasin with piped water *or* a room with a bathtub or shower.)**

NUMBER OF HALF BATHROOMS |_|_|

7. **Does each bathroom have a window that opens or a functioning fan?**

Yes	1
No	2

8. **What kind of sewage disposal facilities do you have?**

Piped liquid waste disposal	1
Septic tank	2
Privy pit	3
Trucked disposal	4
Other (please specify) ______________________	5
Don't know	9

9.a) **Where do you get your water from?** (Circle all that apply.)

Piped water system	1
Well	2
Other	3
Don't know	9

b) **Do you ever have problems with your supply of running water?**

Yes, no water	1
Yes, inadequate water supply	2
No	3 -- > SKIP TO QUESTION 10
Don't know	9

9.c) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

10.a) **Do your plumbing facilities (e.g., toilet, sinks, drains) ever break down or not work properly?**

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	-- > SKIP TO QUESTION 11
Don't know	9	

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Electrical System

11.a) **Does your electrical system (wiring, outlets) ever break down or not work properly?**

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	-- > SKIP TO QUESTION 12
Don't know	9	

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Heating System

12. **What is the principal fuel used for heating this dwelling?** (Circle the appropriate number. If you use a second fuel at least one third of the time, circle one number in the second column.)

	Principal Fuel	**Secondary Fuel**
Oil or kerosene	1	1
Piped gas (e.g., natural gas)	2	2
Bottled gas (e.g., propane)	3	3
Electricity	4	4
Coal or coke	5	5
Wood	6	6
Other (please specify) ________________	7	7

13. **What is the principal type of heating equipment for this dwelling?** (Circle the appropriate number. If at least one third of the heating is provided by a second type of equipment, circle one number in the second column.)

	Principal Heating Equipment	**Secondary Heating Equipment**
Forced hot air furnace	1	1
Steam or hot water boiler	2	2
Space heater (e.g., oil or electric)	3	3
Electric baseboard heating	4	4
Cooking stove, range, or heating stove	5	5
Woodstove	6	6
Other (please specify) ________________	7	7

14.a) **Does your heating system ever break down or not work properly?** (Do not include interruptions resulting from electrical failures.)

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	--> **SKIP TO QUESTION 15**
Don't know	9	

14.b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

Elevators

15. **Does this building have an elevator?**

Yes	1
No	2

16.a) **Does your elevator break down or not work properly?**

Yes, breaks down	1	
Yes, does not work properly	2	
No	3	--> **SKIP TO QUESTION 17**
Don't know	9	

b) **Approximately how often does this happen?**

Once a year	1
Once every six months	2
Once a month	3
Once a week	4
More than once a week	5
Constantly/All the time	6
Don't know	9

17. **To the best of your knowledge, are any of the following health and safety *hazards* present in this dwelling?**

	Yes	No	Don't Know
Fire hazards	1	2	9
Toxic materials	1	2	9
Pests	1	2	9

Satisfaction with Facilities and Equipment

18. **Are you satisfied or dissatisfied with the extent to which the following facilities and equipment meet your household needs?** Please rate on the 7-point scale where 1 is extremely dissatisfied, 7 is extremely satisfied, and the midpoint 4 is neither satisfied nor dissatisfied.

		EXTREMELY DISSATISFIED			NEITHER			EXTREMELY SATISFIED
a.	*Kitchen appliances*	1	2	3	4	5	6	7
b.	*Water quality*	1	2	3	4	5	6	7
c.	*Baths and showers*	1	2	3	4	5	6	7
d.	*Water supply and sewage disposal system*	1	2	3	4	5	6	7
e.	*Heating*	1	2	3	4	5	6	7
f.	*Lighting*	1	2	3	4	5	6	7
g.	*Electrical system*	1	2	3	4	5	6	7
h.	*Air quality*	1	2	3	4	5	6	7

III. ADEQUACY OF DWELLING

19. **How satisfied are you with the following aspects of the interior of your dwelling?**

		EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
a.	*Interior design/layout of rooms*	1	2	3	4	5	6	7
b.	*Exposure to sunlight*	1	2	3	4	5	6	7
c.	*Noise from inside the building (e.g., other apartments, common areas)*	1	2	3	4	5	6	7
d.	*Noise from outside (e.g., street, traffic)*	1	2	3	4	5	6	7
e.	*Crowding*	1	2	3	4	5	6	7
f.	*Amount of space*	1	2	3	4	5	6	7
g.	*Closets and storage areas*	1	2	3	4	5	6	7
h.	*Safety and security of the building/property*	1	2	3	4	5	6	7

Neighbourhood

20. **How satisfied are you with the following aspects of your neighbourhood?**

		EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
a.	*Parks and green space*	1	2	3	4	5	6	7
b.	*Physical condition of the surrounding properties and dwellings*	1	2	3	4	5	6	7
c.	*Amount of traffic*	1	2	3	4	5	6	7
d.	*Street lighting*	1	2	3	4	5	6	7
e.	*Physical condition of roads and sidewalks*	1	2	3	4	5	6	7
f.	*Police and fire protection*	1	2	3	4	5	6	7
g.	*Recreation facilities*	1	2	3	4	5	6	7

20. Continued.

	EXTREMELY DISSATISFIED			NEITHER SATISFIED NOR DISSATISFIED			EXTREMELY SATISFIED
h. *Water and sewage services* . .	1	2	3	4	5	6	7
i. *Your neighbourhood as a whole*	1	2	3	4	5	6	7

21. **Considering the amount of crime in your community, how safe do you feel living in your present dwelling?**

COMPLETELY UNSAFE			NEITHER SAFE NOR UNSAFE			COMPLETELY SAFE
1	2	3	4	5	6	7

IV. PHYSICAL CONDITION AND NEED FOR REPAIR

22. **Do you have any problems with cold air drafts from loose, missing or poorly sealed windows?**

Yes 1
No 2

23. **Do you have any problems with cold air drafts from poorly fitting or missing doors?**

Yes 1
No 2

24. **Do you have any leaks or water penetration through the walls or roof of your dwelling?**

Yes 1
No 2

25. **Do you have any problems with water penetration or flooding in your basement?**

Yes 1
No 2

26. **Considering all aspects of your dwelling, what is the physical condition and repair need of each of the following?** Please rate each component on a 7-point scale where 1 is *beyond repair/replace,* 7 is *perfect condition/like new* and the midpoint 4 is the *minimum acceptable condition.*

		BEYOND REPAIR/ REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/ LIKE NEW	Not Applicable	Don't Know
a.	*The **outside** of your home?*	1	2	3	4	5	6	7	8	9
b.	*The **inside** of your home?*	1	2	3	4	5	6	7	8	9
c.	*The mechanical systems (e.g., electrical, heating/cooling, plumbing systems)* . . .	1	2	3	4	5	6	7	8	9
d.	*For residents of multiple unit dwellings only: The common areas (e.g., hallways, recreational areas)* . . .	1	2	3	4	5	6	7	8	9
e.	***The overall condition** of your dwelling*	1	2	3	4	5	6	7	8	9

27.a) **Is this dwelling in need of any repairs?**

NO, REGULAR MAINTENANCE is needed (painting, furnace, cleaning, etc.)	1	--> SKIP TO QUESTION 28
YES, MINOR REPAIRS are needed (missing or loose floor titles, bricks or shingles defective steps, railing or siding, etc.	2	
YES, MAJOR REPAIRS are needed (defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc.	3	

b) **Have the problems existed for more than one year?**

Yes	1
No	2

V. SHELTER COSTS AND FINANCES

Renters

28. **What is the monthly cash rent you now pay for this dwelling? Check the box if you do not have to pay a cash rental.**

$ __ , __ __ __ .00 **OR** ☐ *Rental without payment of cash rent*

29. **What are your approximate total annual payments for the following utilities? Please check the box if the item is included in your rent.**

		Included in rent
Hydro	__ , __ __ __	☐
Water	__ , __ __ __	☐
Heating Fuel	__ , __ __ __	☐
Parking	__ , __ __ __	☐

30. **Considering all sources, what was your approximate *total household income* in 19890**

$ __ __ __ , __ __ __ .00

31. **If you do not know your total household income for 1990, please tell us your total household income for the last month?**

$ __ __ , __ __ __ .00

32. **What are the main sources of income for your household?**

	Primary	**Secondary**
Employment/self-employment	1	1
Welfare/social assistance	2	2
Old age pension	3	3
Disability or workers' compensation	4	4
Unemployment insurance	5	5
Other(s) (please specify) ______________	6	6
Don't know	9	9

33. **Considering your current income, do you find it easy or difficult to meet your shelter related costs?**

EXTREMELY DIFFICULT			SOMEWHAT DIFFICULT			NOT AT ALL DIFFICULT
1	2	3	4	5	6	7

VI. CHARACTERISTICS OF THE HOUSEHOLD

34. **Which of the following types best describes your household?** (Circle one number only.)

One person, living alone	1
One adult with children	2
A married or common-law couple, without children	3
A married or common-law couple, with children	4
Two or more unrelated persons	5
Other (please specify) ________________	6

35. **Does any member of this household have any health problem or physical disability that requires the use of special physical structures or facilities in or around this dwelling (e.g., accessibility to dwelling and major rooms by wheelchair, grab bars, kitchen modifications, electronic intercoms, etc.)?** (Please circle the appropriate number.)

No	1
Yes, and changes to this dwelling would be desirable	2
Yes, but the dwelling is well designed and incorporates satisfactory features	3
Yes, but the dwelling has already been modified and is now satisfactory	4

36. **What type of disabilities do members of your household have that have required changes to your dwelling or will require changes?** (Circle all that apply.)

Visual	1
Hearing	2
Cognition	3
Mobility	4
Allergy-related	5
Other	6

37. **Which of these occupational groups comes closest to describing your current occupation (or former, if retired) and that of your spouse?**

	You	Your Spouse
No spouse		0
Farming, fishing, forestry, logging, mining and quarrying occupations	01	01
Labourer	02	02
Semi-skilled	03	03
Skilled tradesman	04	04
Sales, service, clerical	05	05
Professional	06	06
Managerial or administrative	07	07
Homemaker	08	08
Other (please specify) ________	09	09

38. **Which of the following categories best describes the employment status of you and your spouse in 1985?**

	You	Your Spouse
No spouse		0
Self employed	1	1
Full-time employee	2	2
Part-time employee	3	3
Unemployed	4	4
Full-time student	5	5
Retired	6	6
Other (please specify) ________	7	7

39. **Please identify the age, gender, and relationship to you of each person who lives in this dwelling.** (Please include yourself, your spouse, other family members, roommates, boarders and anyone else who usually lives here.) (Continue on back if necessary.)

			Relationship to You			
Person	**Age**	**Gender**	**Spouse**	**Child**	**Parent**	**Other**
1) *Yourself*	└┴┘	M F	-	-	-	-
2) *Person 2*	└┴┘	M F	1	2	3	4
3) *Person 3*	└┴┘	M F	1	2	3	4
4) *Person 4*	└┴┘	M F	1	2	3	4
5) *Person 5*	└┴┘	M F	1	2	3	4
6) *Person 6*	└┴┘	M F	1	2	3	4
7) *Person 7*	└┴┘	M F	1	2	3	4
8) *Person 8*	└┴┘	M F	1	2	3	4

SURVEY QUESTIONNAIRE
SURVEY OF LANDLORDS

I. BUILDING CHARACTERISTICS

1. **Which of the following *best* describes this building?**

Single house — a single house not attached to any other building	01
Semi-detached or double house — two houses attached side-by-side but not attached to any other building	02
Duplex — two houses, one above the other, not attached to any other building	03
Row house — three or more houses joined side-by-side	04
Apartment building that has less than five storeys (e.g., low rise apartment, multiplex)	05
Apartment building that has five or more storeys	06
Other (please specify) ________________	07

2. **How many storeys are there (above grade) in this building?**

NUMBER OF STOREYS |__|__|

3. **How many dwelling units of each of the following sizes are in this rental building? (A dwelling unit is a separate set of living quarters with a private entrance from the outside or from a common hallway or stairway inside the building. This entrance should not be through someone else's living quarters.)**

Bachelor/single rooms	
One bedroom units	
Two bedroom units	
Three bedroom units	
Four or more bedrooms	
Total number of units	

4. **In total, how many of these units are currently vacant?**

Number vacant

5.a) **What is the average rent (or range of rents) that tenants pay each month in this building for the different unit sizes?**

	Average Rent	**OR**	**Range of Rents**			
Bachelor/single rooms		OR		TO		Dollars
One bedroom		OR		TO		Dollars
Two bedroom		OR		TO		Dollars
Three bedroom		OR		TO		Dollars
Four or more bedrooms		OR		TO		DOLLARS

b) **Does the rent include the following items?**

	Yes	No	NA	DK/NR
Electricity	1	2	8	9
Heating	1	2	8	9
Water	1	2	8	9
Parking	1	2	8	9

6. **To the best of your knowledge, approximately when was this building originally built?**

|1| | | |

7. **How long have you or your company owned this building?** (Round up to the nearest full year. If less than one year, please indicate 1 year.)

NUMBER OF YEARS | | |

8. **What is the legal form of ownership for this building?** [Read list if necessary.]

Individual owner	01	
Husband/wife co-owners	02	
Partnership with other relative(s)	03	
Unincorporated partnership	04	
Numbered company	05	
Investors	06	
Corporation	07	*Total Number of Employees?* | | | |
In trust (for whom?)	08	
Other (please specify) ____________________	| | |	
DK/NR	99	

9. **Do you, or any of the other owners, live in the building?**

Yes	1
No	2
NA	8
DK/NR	9

10. **Approximately what size is the lot of this building?**

| | | | | | *square feet*

OR | | | | | | *square metres*

11. **Which of the following health and safety features do you have in this building?**

	Yes	No	Don't Know
Smoke or fire detectors	1	2	9
Fire safety exits	1	2	9
Fire suppression system (e.g., sprinkler)	1	2	9
Emergency lighting	1	2	9

12. **Which of the following security features do you have in this building?**

	Yes	No	Don't Know
Security alarm system	1	2	9
Security lighting	1	2	9
Security guard	1	2	9

II. PHYSICAL CONDITION AND NEED FOR REPAIR

13. **Following is a list of the major components of your building. In your opinion, what is the overall physical condition and repair need of each of these major components?** Please rate each component on a 7-point scale where 1 is *beyond repair/replace*, 7 is *perfect condition/like new* and the midpoint 4 is the *minimum acceptable condition*.

		BEYOND REPAIR/REPLACE			MINIMUM ACCEPTABLE CONDITION			PERFECT CONDITION/LIKE NEW	NA	DK/NR
a.	*The outside of your building (e.g., outside walls, roof, doors, windows, balconies)* . . .	1	2	3	4	5	6	7	8	9
b.	*The inside of dwelling units (e.g., walls, ceilings, floors)*	1	2	3	4	5	6	7	8	9
c.	*Common areas of the building (e.g., entranceways, hallways, storage areas, recreational areas)*	1	2	3	4	5	6	7	8	9
d.	*Parking area or structure*	1	2	3	4	5	6	7	8	9
e.	*Furnace and heating system*	1	2	3	4	5	6	7	8	9
f.	*Electrical (e.g., visible wiring, lighting fixtures)*	1	2	3	4	5	6	7	8	9
g.	*Ventilation (air quality, moisture control)*	1	2	3	4	5	6	7	8	9
h.	*Plumbing (e.g., pipes, fixtures)*	1	2	3	4	5	6	7	8	9
i.	*Elevators*	1	2	3	4	5	6	7	8	9
j.	*Fire/security systems (e.g., alarms, intercoms)*	1	2	3	4	5	6	7	8	9
k.	*The **overall condition** of your building*	1	2	3	4	5	6	7	8	9

14. **Is this building in need of any repairs?** (Do not include desirable remodelling or additions.)

NO, REGULAR MAINTENANCE is needed (painting, furnace cleaning, etc.)	1
YES, MINOR REPAIRS are needed (missing or loose floor tiles, bricks or shingles, defective steps, railing or siding, etc.)	2
YES, MAJOR REPAIRS are needed (defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc.)	3

III. RENOVATION HISTORY

15.a) Have there been any breakdowns or problems requiring repair in the following components of this building in this past 12 months?

b) Have you undertaken any repairs or improvements in any of these areas in the past 12 months?

c) If yes, approximately how much money was spent on those repairs/ improvements?

		Breakdowns/ Problems		**Repairs**		**Improve-ments**		**Cost**
		Yes	**No**	**Yes**	**No**	**Yes**	**No**	
i.	*Outside of the building (e.g., outside walls, roof, doors, windows, balconies)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
ii.	*Inside of the dwelling units (e.g., walls, ceilings, floors)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
iii.	*Common areas of the building (e.g., entranceways, hallways, storage areas, recreational areas)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
iv.	*Parking area or structure*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
v.	*Furnace and heading system*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
vi.	*Electrical system (e.g., visible wiring, lighting fixtures)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
vii.	*Ventilation (e.g., air quality, moisture control)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
viii.	*Plumbing (e.g., pipes, fixtures)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
ix.	*Elevators*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐
x.	*Fire/security systems (e.g., alarms, intercoms)*	1	2	1	2	1	2	$ ☐☐☐☐☐☐.☐☐

16. **Were any of the tenants in this building moved out temporarily as a result of the renovation work done in 1990?**

YES 1
NO 2

If so, how many? |_|_|_|

For how long, on average? |_|_|_| Days

17. **Did any tenants in this building move out permanently because of renovation work completed in 1990 (e.g., to avoid higher rent or inconvenience)?**

YES 1
NO 2

If so, how many? |_|_|_|

18.a) **Do any tenants in this building have any health problem or disability that requires the use of special physical structures or facilities in or around the building (e.g., accessibility to dwelling and major rooms by wheelchair, grab bars, kitchen modifications, electronic intercoms, etc.)?** (Please circle the appropriate number.)

No 1

Yes, and changes to this building would be desirable 2

Yes, but the building is well designed and incorporates satisfactory features 3

Yes, but the building has already been modified and is now satisfactory 4

Don't Know 9

19.a) **Have any units within this building been built or modified to meet the specific needs of disabled persons?**

YES 1
NO 2
DK/NR 3

19.b) **IF YES: How many units?**

|_|_|_| *Units*

The following questions concern the regular maintenance of the building.

20. **Are the regular maintenance tasks in this building — that is snow removal, the cleaning of corridors, staircases or entrances, minor repairs, the monitoring of the heating or ventilation system — performed *mainly* by...** [Circle one answer only.]

the landlord himself/herself	1
a superintendent who lives in the building	2
an employee of yours or a maintenance contractor who lives elsewhere	3
various people depending on the type of work involved	4

21. **Are the following components of this building inspected on a regular basis? If yes, how frequently is each component inspected?**

		INSPECTED		**FREQUENCY**	
		YES	**NO**	**At Least Once Per Year**	**Less Frequently Than Once Per Year**
a)	*Outside of the building (e.g., outside walls, roof, doors, windows, balconies)*	1	2	1	2
b)	*Inside of the dwelling units (e.g., walls, ceilings, floors)*	1	2	1	2
c)	*Common areas of the building (e.g., entranceways, hallways, storage areas, recreational areas)*	1	2	1	2
d)	*Parking area or structure*	1	2	1	2
e)	*Furnace and heating system*	1	2	1	2
f)	*Electrical system (e.g., visible wiring, lighting fixtures)*	1	2	1	2
g)	*Ventilation (e.g., air quality, moisture control)*	1	2	1	2
h)	*Plumbing (e.g., pipes, fixtures)*	1	2	1	2
i)	*Elevators*	1	2	1	2
j)	*Fire/security systems (e.g., alarms, intercoms)*	1	2	1	2

22. **How satisfied are you with the way your tenants help to maintain the building and keep it in a state of good repair?** Please respond on a 7-point scale where 1 is extremely dissatisfied, 7 is extremely satisfied, and the midpoint 4 is neither satisfied nor dissatisfied.

EXTREMELY DISSATISFIED			NEITHER			EXTREMELY SATISFIED
1	2	3	4	5	6	7

IV. BUILDING COSTS AND FINANCES

23. What price did you pay for this building?

Purchase Price	$ |_|_| |_|_|_| |_|_|_|.00

24. Is there a mortgage outstanding on this building?

YES 1
NO . . . . 2 --> SKIP TO Q.26

25. What is the approximate amount of the principal outstanding on the mortgage(s)?

Mortgage principal	$ |_|_|_| |_|_|_|.00

26. What is the gross annual rental income from this building in 1990 (rental income from the apartment units only)?

Gross annual rental income	$ |_| |_|_|_| |_|_|_|.00

27. What were the revenues resulting from other sources for this building in 1990?

Parking	$ |_|_|_| |_|_|_|.00
Non-residential spaces	$ |_|_|_| |_|_|_|.00
Other, specify (e.g., washers-dryers, furniture, etc.)	$ |_|_|_| |_|_|_|.00

28. What were the expenses for each of the following items in 1990?

a)	*Mortgage (principal and interest)*	$ |_|_|_| |_|_|_|.00
b)	Operating Costs:	
	Hydro/electricity (e.g, lighting of common areas)	$ |_|_|_| |_|_|_|.00
	Heating (if supplied by building)	$ |_|_|_| |_|_|_|.00
	Maintenance and repairs	$ |_|_|_| |_|_|_|.00
	Building insurance	$ |_|_|_| |_|_|_|.00
	Property taxes	$ |_|_|_| |_|_|_|.00
	Superintendent	$ |_|_|_| |_|_|_|.00
	Management costs	$ |_|_|_| |_|_|_|.00
	Miscellaneous	$ |_|_|_| |_|_|_|.00
	Total operating costs	$ |_|_|_| |_|_|_|.00

29. **Do you have a reserve fund in case of major expenses (e.g., replacing the roof)?**

YES 1
NO 2

30. **What is the estimated current market value of this building?**

$ ☐☐☐ ☐☐☐ ☐☐☐ .00

31. **In addition to this one, how many other residential buildings do you own? If none, enter 0.**

Number of buildings ☐ ☐☐☐
Total number of dwelling units ☐ ☐☐☐

V. LANDLORD CHARACTERISTICS

32. Which of the following categories best describes the current employment status of you and your spouse?

	You	Your Spouse
No spouse		0
Self employed	1	1
Full-time employee	2	2
Part-time employee	3	3
Unemployed	4	4
Full-time student	5	5
Retired	6	6
Other (please specify) ____________________	7	7

33. Considering all sources, what was your approximate *total household income* in 1990?

$ |_|_|_|,|_|_|_|.00

34. If you do not know your total household income for 1990, please tell us your total household income for the last month?

$ |_|_|,|_|_|_|.00

35. What is the highest level of education you have achieved?

Some high school	01
High school diploma	02
Some university/college	03
College diploma	04
Bachelors	05
Masters	06
Doctorate	07
Post doctorate	08
Other	09

36. In what year were you born?

|1|9|_|_|

THANK YOU VERY MUCH FOR YOUR TIME.